

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

=> d his

(FILE 'HOME' ENTERED AT 17:08:31 ON 18 JUN 2003)  
SET COST OFF

FILE 'REGISTRY' ENTERED AT 17:08:42 ON 18 JUN 2003

L1 STR  
L2 1 S L1 CSS  
L3 51 S L1 CSS FUL  
SAV L3 LEVY026/A  
L4 49 S L3 AND 46.150.18/RID  
L5 12 S L4 AND 1/NC  
L6 37 S L4 NOT L5  
L7 1 S L6 AND (CU OR P)/ELS  
SEL RN L6 1  
L8 0 S E1  
SEL RN L6 2-37  
L9 1 S L6 NOT E2-E37

FILE 'HCAPLUS' ENTERED AT 17:15:59 ON 18 JUN 2003

L10 2 S L7 OR L9  
L11 39 S L5  
L12 14 S L6  
L13 47 S L10-L12  
L14 1 S US20020142021/PN  
L15 1 S US6375965/PN  
L16 1 S WO98-JP1889/AP, PRN  
L17 1 S (JP97-238973 OR JP97-227113 OR JP97-202575 OR JP97-190494 OR  
L18 1 S L14-L17  
L19 1 S L13 AND L18  
E MATSUO N/AU  
L20 56 S E3  
E MATSUO NORI/AU  
L21 14 S E5  
E MITANI S/AU  
L22 148 S E3, E21  
E ARAKI S/AU  
L23 256 S E3, E20  
E TAKII Y/AU  
L24 36 S E3, 6  
E YAMAGUCHI T/AU  
L25 847 S E3-E5  
E YAMAGUCHI TOMONA/AU  
L26 6 S E3  
L27 24666 S (ISHIHARA? OR SANGYO? OR KAISHA?)/PA, CS  
L28 22 S L13 AND L20-L27  
L29 22 S L19, L28

FILE 'REGISTRY' ENTERED AT 17:21:14 ON 18 JUN 2003

FILE 'HCAPLUS' ENTERED AT 17:21:14 ON 18 JUN 2003

SET SMARTSELECT ON  
L30 SEL L29 1- RN : 557 TERMS  
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 17:21:15 ON 18 JUN 2003

L31 557 S L30  
L32 29 S L31 AND L7, L9, L5, L6  
L33 12 S L32 AND 1/NC  
L34 17 S L31 AND P/ELS  
L35 8 S L34 AND (H3O2P OR H3O3P OR H3O4P)  
L36 1 S L34 AND P/MF  
L37 1 S L34 AND C2H7O3P NOT MXS/CI  
L38 10 S L35, L36, L37

L39 4 S 7664-38-2 OR 15845-66-6 OR 13598-36-2 OR 6303-21-5  
E PHOSPHOROUS ACID/CN  
L40 2 S E3  
E HYPOPHOSPHOROUS ACID/CN  
L41 2 S E3  
E PHOSPHORIC ACID/CN  
L42 1 S E3  
L43 3 S L39 NOT ESTER  
L44 5 S L40-L43  
SEL RN  
L45 15128 S E1-E5/CRN  
L46 0 S L45 AND L4  
L47 10860 S L45 NOT (MXS OR IDS OR MNS OR PMS OR AYS OR TIS OR RIS)/CI  
L48 9015 S L47 NOT (COMP D OR WITH)  
L49 3073 S L48 AND NR>=1  
L50 5942 S L48 NOT L49  
L51 5947 S L44,L50  
L52 5949 S L38,L51  
L53 2 S L31 AND CU/ELS  
E CINNAMIC ACID/CN  
L54 1 S E3  
E BETA.-METHOXYACRYLATE/CN  
E METHOXYACRYLATE/CN  
L55 3 S L31 AND ?ACRYL?/CNS  
L56 1 S 6162-52-3  
E OXAZOLIDINEDIONE/CN  
L57 1 S E3  
L58 8 S L31 AND C3NO/EA  
L59 256 S L31 AND 46.150.18/RID  
L60 214 S L59 AND 1/NC AND N/ELS  
L61 11 S L60 AND 1/NR  
E PHENYLAMINE/CN  
L62 1 S E3

FILE 'HCAPLUS' ENTERED AT 17:33:47 ON 18 JUN 2003

L63 9 S L52 AND L13  
L64 5 S L53 AND L13  
L65 1 S L54 AND L13  
L66 1 S L56 AND L13  
L67 1 S L57 AND L13  
L68 0 S L62 AND L13  
L69 9 S L63-L67  
L70 9 S L19,L69  
L71 2 S L29 AND L70  
L72 9 S L70,L71  
L73 20 S L29 NOT L72  
SEL RN L19

FILE 'REGISTRY' ENTERED AT 17:35:53 ON 18 JUN 2003

L74 111 S E1-E111  
L75 4 S L74 AND L4  
L76 2 S L74 AND CU/ELS  
L77 10 S L74 AND L52  
L78 2 S L74 AND C3NO/EA  
L79 3 S L74 AND OC4/ES  
L80 1 S L74 AND C3/ES  
L81 1 S L74 AND NC2OC2/ES  
L82 1 S L74 AND (P AND S AND CL)/ELS  
L83 1 S L74 AND NCNC3/ES  
L84 9 S L74 AND 46.150.18/RID AND 1/NR  
L85 8 S L84 AND 1/NC  
L86 2 S L74 AND METHOXYIMINO  
L87 2 S L31 AND METHOXYIMINO NOT L86

L88 12 S L74 AND 46.150.18/RID AND 2/NR AND 1/NC  
L89 2 S L88 AND DL  
L90 10 S 131860-33-8 OR 143390-89-0 OR 131807-57-3 OR 57837-19-1 OR 77  
SEL RN  
L91 803 S E112-E121/CRN  
L92 2 S L91 AND L4

FILE 'HCAPLUS' ENTERED AT 17:55:23 ON 18 JUN 2003

L93 1 S L92  
L94 2597 S L90  
L95 12 S L94 AND L13  
L96 13 S L93,L95,L72  
L97 5 S L76 AND L13  
L98 14 S L96,L97,L10  
L99 3 S L98 AND (PD<=19980423 OR PRD<=19980423 OR AD<=19980423)  
E TAKII Y/AU  
L100 13 S E3,E6  
L101 1 S L99 AND L100  
L102 3 S L99,L101  
L103 15 S L13 AND (PD<=19980423 OR PRD<=19980423 OR AD<=19980423)  
L104 12 S L103 AND L20-L27,L100  
L105 13 S L103,L104 AND L63-L73  
L106 3 S L103,L104 AND L93-L96  
L107 3 S L102,L106  
L108 12 S L103-L105 NOT L107

FILE 'REGISTRY' ENTERED AT 18:00:19 ON 18 JUN 2003

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 18:00:37 ON 18 JUN 2003

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 18 Jun 2003 VOL 138 ISS 25

FILE LAST UPDATED: 17 Jun 2003 (20030617/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l107 all hitstr tot

L107 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:372031 HCAPLUS

DN 131:1683

TI Synergisti agrochemical fungicidal composition containing a 2-imidazolin-5-one derivative

IN Chazalet, Maurice; Latorse, Marie-Pascale; Mercer, Richard

PA Rhone Poulenc Agrochimie, Fr.

SO PCT Int. Appl., 44 pp.

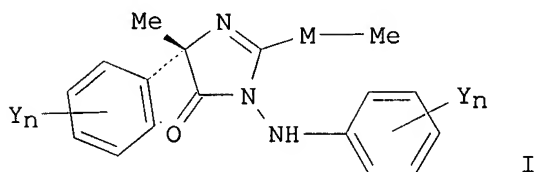
CODEN: PIXXD2

DT Patent  
 LA French  
 IC ICM A01N043-50  
 ICS A01N043-50; A01N047-12; A01N043-54; A01N043-50; A01N043-30;  
 A01N037-40

CC 5-2 (Agrochemical Bioregulators)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9927788	A1	19990610	WO 1997-FR2170	19971202 <--
	W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU				
	RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9896048	A1	19990616	AU 1998-96048	19971202 <--
	AU 740846	B2	20011115		
	BR 9712240	A	19990831	BR 1997-12240	19971202 <--
	EP 973397	A1	20000126	EP 1997-948972	19971202 <--
	EP 973397	B1	20030521		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
	CN 1245396	A	20000223	CN 1997-191576	19971202 <--
	NZ 330601	A	20001222	NZ 1997-330601	19971202 <--
	JP 2001508409	T2	20010626	JP 1998-524380	19971202 <--
	AP 991	A	20010802	AP 1999-1499	19971202 <--
	W: KE				
	RO 118108	B1	20030228	RO 1998-1043	19971202 <--
	ZA 9711153	A	19990611	ZA 1997-11153	19971211 <--
	CN 1239402	A	19991222	CN 1997-191529	19971230 <--
	ZA 9800031	A	19980707	ZA 1998-31	19980105 <--
	US 2002019428	A1	20020214	US 1999-77988	19990914 <--
	US 6384067	B2	20020507		
	US 2002132841	A1	20020919	US 2002-99076	20020313 <--
PRAI	PL 1997-334555	A	19971202		<--
	HU 1999-4198	A	19971202		<--
	WO 1997-FR2170	A	19971202		<--
	ZA 1997-11153	A	19971211		<--
	US 1999-77988	A3	19990914		
OS	MARPAT 131:1683				
GI					



AB The title compn.comprises a 2-imidazoline-5-one deriv. I (M = O or S; Y = F, Cl or Me; n = 0 or 1), preferably (4S)-4-methyl-2-methylthio-4-phenyl-1-phenylamino-2-imidazoline-5-one, and a compd. selected from propamocarb, S-Me ester of 1,2,3-benzothiadiazole-7-carbothioic acid, cyprodinil, salicylic acid, its esters and its salts, in particular with alk. and alk.-earth metals, spiroxamine, fencaramide, and 4-chloro-2-cyano-1-dimethylsulfamoyl-5-(4-methylphenyl)imidazole.

ST imidazolinone deriv fungicide compn synergism

IT Fungicides

(synergistic, agrochem.; imidazolin-5-one deriv.-contg. compns.)

IT 204444-70-2 204444-71-3 225504-20-1 225504-21-2 225504-23-4

225504-24-5

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(synergistic fungicidal compn.)

IT 69-72-7D, Salicylic acid, mixts. with 2-imidazoline-5-one deriv.  
3735-90-8D, Fencarbamide, mixts. with 2-imidazoline-5-one deriv.  
24579-73-5D, Propamocarb, mixts. with 2-imidazoline-5-one deriv.  
**39148-24-8D**, Fosetyl al, mixts. with 2-imidazoline-5-one deriv.  
118134-30-8D, Spiroxamine, mixts. with 2-imidazoline-5-one deriv.  
**120116-88-3D**, mixts. with 2-imidazoline-5-one deriv.  
121552-61-2D, Cyprodinil, mixts. with 2-imidazoline-5-one deriv.  
135158-54-2D, mixts. with 2-imidazoline-5-one deriv. 161326-34-7D,  
mixts. contg. 225504-25-6D, mixts. with 2-imidazoline-5-one deriv.

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(synergistic fungicidal compns.)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Latorse, M; WO 9603044 A 1996 HCAPLUS

(2) Rhone Poulenc Agrochimie; EP 0551048 A 1993 HCAPLUS

(3) Rhone Poulenc Agrochimie; FR 2751845 A 1998 HCAPLUS

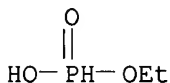
IT **39148-24-8D**, Fosetyl al, mixts. with 2-imidazoline-5-one deriv.

**120116-88-3D**, mixts. with 2-imidazoline-5-one deriv.

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(synergistic fungicidal compns.)

RN 39148-24-8 HCAPLUS

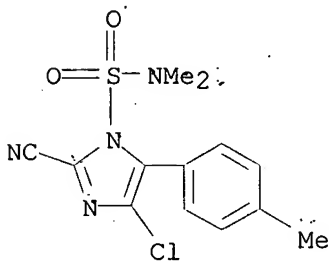
CN Phosphonic acid, monoethyl ester, aluminum salt (9CI) (CA INDEX NAME)



1/3 A1

RN 120116-88-3 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



L107 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:739511 HCAPLUS

DN 130:11540

TI Composition and method for controlling harmful bio-organisms on plants

IN Matsuo, Norifusa; Mitani, Shigeru; Araki,

Satoshi; Takii, Yasuko; Yamaguchi, Tomona

PA Ishihara Sangyo Kaisha, Ltd., Japan

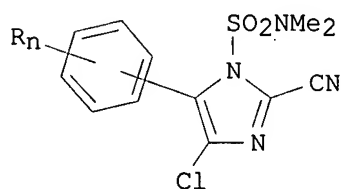
SO PCT Int. Appl., 112 pp.

CODEN: PIXXD2

DT Patent

LA English  
 IC A01N043-50; A01N043-50; A01N061-00; A01N059-26  
 CC 5-2 (Agrochemical Bioregulators)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9848628	A1	19981105	WO 1998-JP1889	19980423	<--
	W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	JP 11005706	A2	19990112	JP 1998-126711	19980420	<--
	AU 9870810	A1	19981124	AU 1998-70810	19980423	<--
	AU 752101	B2	20020905			
	EP 979034	A1	20000216	EP 1998-917663	19980423	<--
	EP 979034	B1	20030226			
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, RO				
	BR 9815483	A	20020205	BR 1998-15483	19980423	<--
	NZ 500548	A	20020828	NZ 1998-500548	19980423	<--
	AT 233049	E	20030315	AT 1998-917663	19980423	<--
	ZA 9803506	A	19981102	ZA 1998-3506	19980424	<--
	JP 11071209	A2	19990316	JP 1998-196624	19980626	<--
	JP 11106301	A2	19990420	JP 1998-196625	19980626	<--
	JP 11124305	A2	19990511	JP 1998-196626	19980626	<--
	US 6375965	B1	20020423	US 1999-403368	19991021	<--
	NO 9805164	A	19991221	NO 1999-5164	19991022	<--
	MX 9909802	A	20000731	MX 1999-9802	19991025	<--
	US 2002142021	A1	20021003	US 2001-26700	20011227	<--
PRAI	JP 1997-123382	A	19970425			<--
	JP 1997-190494	A	19970630			<--
	JP 1997-202575	A	19970711			<--
	JP 1997-227113	A	19970808			<--
	JP 1997-238973	A	19970819			<--
	WO 1998-JP1889	W	19980423			<--
	US 1999-403368	A3	19991021			
OS	MARPAT 130:11540					
GI						



AB Imidazoles I (R = lower alkyl, lower alkoxy; n = 1-5), when combined with .gtoreq.1 inorg. P compd. and/or .gtoreq.1 fungicide for Phycomycetes as an active ingredient, or with a spreader as an activity-enhancing ingredient, are useful in agriculture and horticulture for controlling fungi, bacteria, and insects which cause plant diseases. These compns. have a prolonged residual effect and so have preventive as well as curative activity; they are active systemically. Thus, a combination of 4-chloro-2-cyano-1-dimethylsulfamoyl-5-(4-methylphenyl)imidazole (II; 100 ppm) and Na3PO4.12H2O (2000 ppm), sprayed on cucumber plants at the 2-leaf

stage 24 h after inoculation with downy mildew (*Pseudoperonospora cubensis*) spores, was 100% curative, compared to 5% for either component alone. A wettable powder was prepd. contg. II 5, Na<sub>3</sub>PO<sub>4</sub>.12H<sub>2</sub>O 16, diatomaceous earth 73, dialkyl sulfosuccinate 2, and polyoxyethylene alkylphenyl ether sulfate 4 parts.

- ST imidazole deriv agrochem pesticide; fungicide agrochem imidazole deriv
- IT Polyoxyalkylenes, biological studies
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (alkylphenol ethers, mixts. with ligninsulfonic acid; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Lubricating oils
  - (diesel; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Agrochemical formulations
  - (dispersions; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Canola oil
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (ethoxylated, D 233N; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Resin acids
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (ethoxylated, Sorpol 7261; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Castor oil
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (ethoxylated; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Fungicides
  - Pesticides
  - Surfactants
  - (imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Anilides
  - Corn oil
  - Fats and Glyceridic oils, biological studies
  - Hydrocarbon oils
  - Linseed oil
  - Paraffin oils
  - Polyphosphoric acids
  - Smectite-group minerals
  - Soybean oil
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Lubricating oils
  - (machine; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Pesticides
  - (organochlorine; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Pesticides
  - (organophosphorus; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Fungi
  - (phycomycetous; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Amines, biological studies
  - RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
  - (soya alkyl, ethoxylated; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Fungicides
  - (synergistic; imidazole-contg. compn. and method for controlling

- harmful bio-organisms on plants)
- IT Amines, biological studies  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(tallow alkyl, ethoxylated, Rhodameen; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Fats and Glyceridic oils, biological studies  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(vegetable; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT 9016-45-9  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(Agral Plus; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT 577-11-7, Sodium di-2-ethylhexyl sulfosuccinate  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(Genopur SB 1970J; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT 137-20-2, Sodium oleylmethyltauride  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(Hostapon T Pow. H/C; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT 9043-30-5, Genapol X 60  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(Lutensol TO 7; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT 82-68-8, Pentachloronitrobenzene 107-91-5D, Cyanoacetamide, derivs.  
151-21-3, Monogen Y-100, biological studies 621-82-9D, Cinnamic acid, derivs. 1332-40-7, Copper oxychloride 1897-45-6 5138-18-1D, Sulfosuccinic acid, dialkyl esters 6162-52-3D, derivs. 6303-21-5, Phosphinic acid 7440-50-8D, Copper, compds., biological studies 7558-79-4, Disodium hydrogen phosphate 7664-38-2, Phosphoric acid, biological studies 7664-38-2D, Phosphoric acid, alkyl esters, biological studies 7723-14-0D, Phosphorus, inorg. compds., biological studies 7758-11-4, Dipotassium hydrogen phosphate 8061-51-6, Sodium ligninsulfonate 8061-52-7, Calcium lignosulfonate 8061-52-7D, Calcium ligninsulfonate, alkyl esters 8062-15-5D, Ligninsulfonic acid, mixt. with PEG alkylphenol ethers 9004-74-4D, mixt. with diglycerin diol fatty acid ester 9004-82-4, Genapol LRO 9004-98-2 9005-02-1, Coadjuvant Chevron 9005-63-4D, alkyl ethers 9005-64-5, Tween 20 9010-77-9, Poligen WE3 9036-19-5 10101-89-0 12770-97-7D, Oxazolidinedione, derivs. 13457-18-6, Pyrazophos 13517-23-2 13530-50-2, Aluminum tris(dihydrogen phosphate) 13598-36-2, Phosphonic acid 17109-49-8, Edifenphos 20427-59-2, Cupric hydroxide 25322-68-3D, PEG, alkylphenol ethers, mixts. with ligninsulfonic acid 26087-47-8, Iprobenfos 26264-58-4, Supragil MNS/90 27306-78-1, Silwet L-77 29321-75-3 31799-71-0 34870-92-3D, alkylphenyl ethers 39148-24-8 39342-50-2, Citowett 57018-04-9, Tolclofos-methyl 57646-30-7, Furalaxyl 57837-19-1, Metalaxyl 57966-95-7, Cymoxanil 58318-62-0, Ethylan D 257 58810-48-3, Ofurace 60584-96-5 60828-78-6, Surfactant WK 61827-42-7, Rhodasurf 860P 63100-36-7, Atplus 411F 63704-92-7, Citowett Plus 67528-14-7, Triton ACTM 69581-33-5, Cyprofuram 71626-11-4, Benalaxyl 77732-09-3, Oxadixyl 83137-92-2, Atlox-BI 88650-63-9, Agri-Dex 98886-44-3, S-(sec-Butyl)-O-ethyl-2-oxo-3-thiazolidinyl phosphonothioate 99734-09-5, Soprophor BSU 110488-70-5, Dimethomorph 111417-43-7, Surfix 114797-22-7, Bond (latex) 120116-88-3 120117-04-6 120117-05-7 120117-91-1 123897-56-3, Lutensol ON 60 131807-57-3 131860-33-8 138463-82-8, Agral 30 142368-67-0, Prime Oil 143350-75-8, Kinetic 143390-89-0 152986-97-5, DyneAmic 164003-52-5, Scoil 165724-16-3, Latron B-1956 182761-09-7, Arma (surfactant) 182761-54-2, Slippa 182892-92-8,

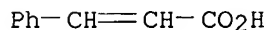
Agrimax 3H 215868-09-0, Needs 215868-14-7, Nisseki Noyaku Oil Emulsion  
 215868-16-9, Oleotan 215868-18-1, Sanpun Bordeaux Dust DL 215868-19-2,  
 Seawet 215868-22-7, Atplus SL 92 215868-57-8, Sorpol 7337  
 215868-59-0, SP-Super 215868-60-3, Spray Sticker 215868-61-4, Sun Oil  
 Adjuvant 215868-62-5, Suraid 215868-64-7, Surfate 30 215868-65-8,  
 Surf Oil 215868-70-5, Tokusei Rino 215868-72-7, Trend 215868-77-2, X  
 2-5309 215868-93-2, Super Coral ADH 50 215868-97-6, Adherex MR  
 215868-99-8, Pepol AH 053 215869-01-5, Albol Ineum AK 215923-19-6,  
 Applauch 215923-27-6, Oleo Rustica 11E 215923-30-1, Extravon 40  
 215923-34-5, Hi-Point 215923-35-6, Ishioil 215923-45-8, Alsoap 30  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

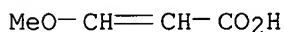
- (1) Ishihara Mining & Chemical Co; EP 0298196 A 1989 HCAPLUS
- (2) Ishihara Mining & Chemical Co; EP 0337103 A 1989 HCAPLUS
- (3) Ishihara Sangyo Kaisha Ltd; JP 03011003 A HCAPLUS

IT 621-82-9D, Cinnamic acid, derivs. 6162-52-3D, derivs.  
 6303-21-5, Phosphinic acid 7440-50-8D, Copper, compds.,  
 biological studies 7558-79-4, Disodium hydrogen phosphate  
 7664-38-2, Phosphoric acid, biological studies 7664-38-2D  
 , Phosphoric acid, alkyl esters, biological studies 7723-14-0D,  
 Phosphorus, inorg. compds., biological studies 7758-11-4,  
 Dipotassium hydrogen phosphate 10101-89-0 12770-97-7D,  
 Oxazolidinedione, derivs. 13517-23-2 13530-50-2,  
 Aluminum tris(dihydrogen phosphate) 13598-36-2, Phosphonic acid  
 20427-59-2, Cupric hydroxide 39148-24-8  
 57018-04-9, Tolclofos-methyl 57646-30-7, Furalaxyl  
 57837-19-1, Metalaxyl 58810-48-3, Ofurace  
 71626-11-4, Benalaxyl 77732-09-3, Oxadixyl  
 110488-70-5, Dimethomorph 120116-88-3  
 120117-04-6 120117-05-7 120117-91-1  
 131807-57-3 131860-33-8 143390-89-0  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)

RN 621-82-9 HCAPLUS  
 CN 2-Propenoic acid, 3-phenyl- (9CI) (CA INDEX NAME)



RN 6162-52-3 HCAPLUS  
 CN 2-Propenoic acid, 3-methoxy- (9CI) (CA INDEX NAME)



RN 6303-21-5 HCAPLUS  
 CN Phosphinic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

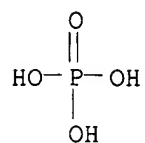


RN 7440-50-8 HCAPLUS  
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7558-79-4 HCAPLUS

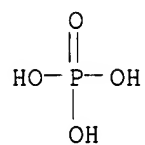
CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)



2 Na

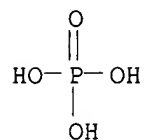
RN 7664-38-2 HCAPLUS

CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7664-38-2 HCAPLUS

CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



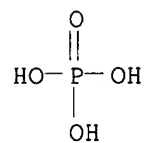
RN 7723-14-0 HCAPLUS

CN Phosphorus (8CI, 9CI) (CA INDEX NAME)

P

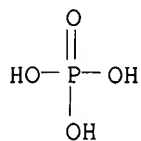
RN 7758-11-4 HCAPLUS

CN Phosphoric acid, dipotassium salt (8CI, 9CI) (CA INDEX NAME)



2 K

RN 10101-89-0 HCAPLUS  
CN Phosphoric acid, trisodium salt, dodecahydrate (8CI, 9CI) (CA INDEX NAME)



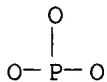
3 Na

12 H<sub>2</sub>O

RN 12770-97-7 HCAPLUS  
CN Oxazolidinedione (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 13517-23-2 HCAPLUS  
CN Phosphonic acid, disodium salt, pentahydrate (8CI, 9CI) (CA INDEX NAME)

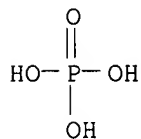


2 Na

5 H<sub>2</sub>O

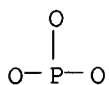
\*\*\* FRAGMENT DIAGRAM IS INCOMPLETE \*\*\*

RN 13530-50-2 HCAPLUS  
CN Phosphoric acid, aluminum salt (3:1) (8CI, 9CI) (CA INDEX NAME)



1/3 Al

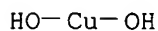
RN 13598-36-2 HCAPLUS  
CN Phosphonic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



\*\*\* FRAGMENT DIAGRAM IS INCOMPLETE \*\*\*

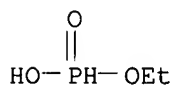
RN 20427-59-2 HCAPLUS

CN Copper hydroxide (Cu(OH)2) (8CI, 9CI) (CA INDEX NAME)



RN 39148-24-8 HCAPLUS

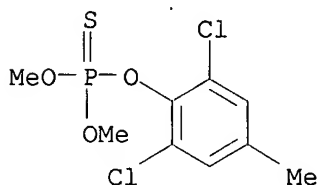
CN Phosphonic acid, monoethyl ester, aluminum salt (9CI) (CA INDEX NAME)



1/3 Al

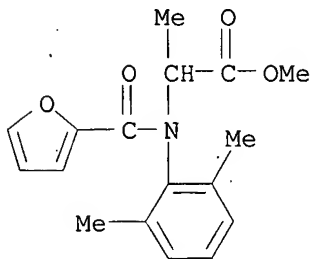
RN 57018-04-9 HCAPLUS

CN Phosphorothioic acid, O-(2,6-dichloro-4-methylphenyl) O,O-dimethyl ester (9CI) (CA INDEX NAME)



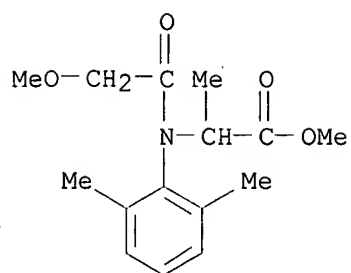
RN 57646-30-7 HCAPLUS

CN Alanine, N-(2,6-dimethylphenyl)-N-(2-furanylcarbonyl)-, methyl ester (9CI) (CA INDEX NAME)

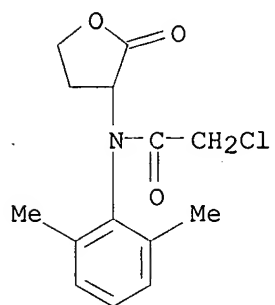


RN 57837-19-1 HCAPLUS

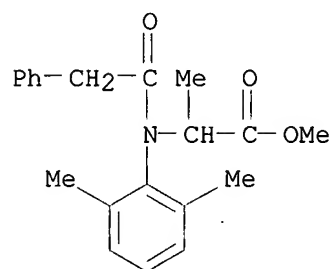
CN Alanine, N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-, methyl ester (9CI) (CA INDEX NAME)



RN 58810-48-3 HCAPLUS

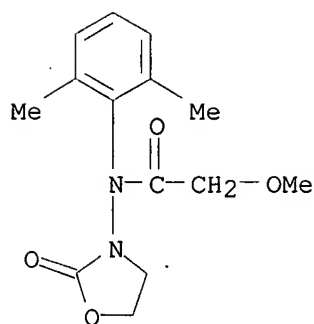
CN Acetamide, 2-chloro-N-(2,6-dimethylphenyl)-N-(tetrahydro-2-oxo-3-furanyl)-  
(9CI) (CA INDEX NAME)

RN 71626-11-4 HCAPLUS

CN Alanine, N-(2,6-dimethylphenyl)-N-(phenylacetyl)-, methyl ester (9CI) (CA  
INDEX NAME)

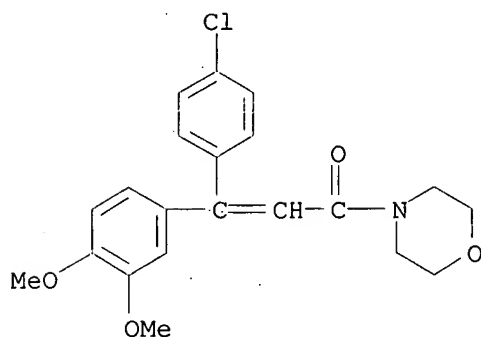
RN 77732-09-3 HCAPLUS

CN Acetamide, N-(2,6-dimethylphenyl)-2-methoxy-N-(2-oxo-3-oxazolidinyl)-  
(9CI) (CA INDEX NAME)



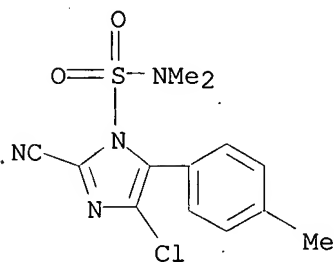
RN 110488-70-5 HCAPLUS

CN Morpholine, 4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)-1-oxo-2-propenyl]- (9CI) (CA INDEX NAME)



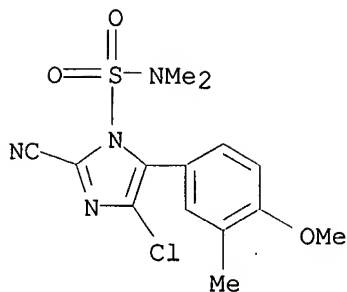
RN 120116-88-3 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



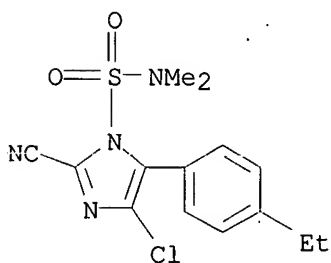
RN 120117-04-6 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



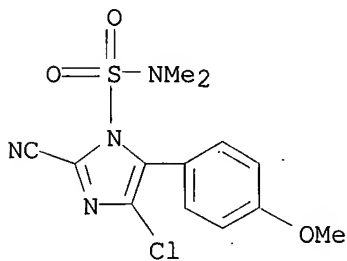
RN 120117-05-7 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



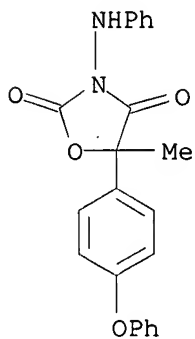
RN 120117-91-1 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 131807-57-3 HCAPLUS

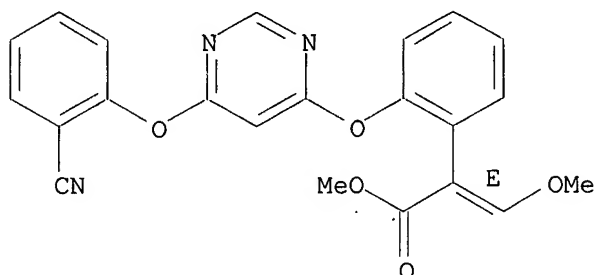
CN 2,4-Oxazolidinedione, 5-methyl-5-(4-phenoxyphenyl)-3-(phenylamino)- (9CI) (CA INDEX NAME)



RN 131860-33-8 HCAPLUS

CN Benzeneacetic acid, 2-[[6-(2-cyanophenoxy)-4-pyrimidinyl]oxy]-.alpha.-(methoxymethylene)-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

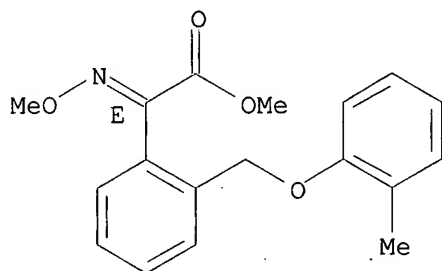
Double bond geometry as shown.



RN 143390-89-0 HCAPLUS

CN Benzeneacetic acid, .alpha.-(methoxyimino)-2-[(2-methylphenoxy)methyl]-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L107 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:212458 HCAPLUS

DN 112:212458

TI Biocidal composition

IN Nasu, Rikuo; Komyoji, Terumasa; Nakajima, Toshio; Suzuki, Kazumi; Ito, Keiichiro; Ohshima, Takeshi; Yoshimura, Hideshi

PA **Ishihara Sangyo Kaisha, Ltd., Japan**

SO Eur. Pat. Appl., 40 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM A01N043-50

ICS A01N059-20; A01N057-12; A01N055-00; A01N053-00; A01N047-38; A01N047-34; A01N047-14; A01N047-04; A01N043-90; A01N043-80

ICI A01N043-50, A01N063-04, A01N059-20, A01N057-12, A01N055-00, A01N053-00, A01N047-38, A01N047-34, A01N047-14

CC 5-2 (Agrochemical Bioregulators)

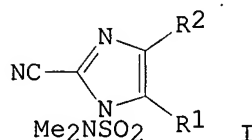
Section cross-reference(s): 28

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 337103	A2	19891018	EP 1989-103887	19890306 <--
	EP 337103	A3	19900117		
	EP 337103	B1	19930210		

R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE

JP 01131163	A2	19890524	JP 1988-57920	19880311 <--
JP 02167204	A2	19900627	JP 1989-31066	19890213 <--
ZA 8901548	A	19891129	ZA 1989-1548	19890228 <--
AT 85498	E	19930215	AT 1989-103887	19890306 <--
ES 2014385	T3	19940801	ES 1989-103887	19890306 <--
AU 8931093	A1	19890914	AU 1989-31093	19890307 <--
AU 609264	B2	19910426		
BR 8901097	A	19891031	BR 1989-1097	19890309 <--
CN 1036879	A	19891108	CN 1989-101331	19890310 <--
HU 54867	A2	19910429	HU 1989-1195	19890310 <--
HU 205833	B	19920728		
US 811	H1	19900807	US 1989-322460	19890313 <--
JP 08003140	A2	19960109	JP 1993-351198	19931228 <--
JP 2824734	B2	19981118		
PRAI JP 1988-57920	A	19880311 <--		
JP 1988-229327	A	19880913 <--		
JP 1987-58451	A1	19870313 <--		
JP 1987-82546	A1	19870403 <--		
JP 1987-106577	A1	19870430 <--		
EP 1989-103887	A	19890306 <--		
OS MARPAT 112:212458				
GI				



AB Combination of an imidazole compd., I (R1 = Ph, halophenyl, alkyl, haloalkyl; R2 = halogen) and other biocides enlarged the biocidal spectrum and reduced the amt. of each compd., as compared with the use of each compd. alone. The preps. of I (R1 = Ph; R2 = Cl), I (R1 = Pr; R2 = Cl) and I (R1 = 3-ClC6H4, R2 = Cl) are described. Thus, a mixt. of I (R1 = Pr; R2 = Cl) (0.5 ppm) and chinomethionate (8 ppm) prevented and controlled tomato late blight (*Phytophthora infestans*) effectively, compared to each component alone.

ST imidazole fungicide formulation

IT *Pythium aphanidermatum*  
(control of growth of, by imidazole-contg. fungicides)

IT *Botrytis cinerea*  
*Pseudoperonospora cubensis*  
(control of, on cucumber, by imidazole-contg. fungicides)

IT *Rhizoctonia solani*  
(control of, on rice, by imidazole-contg. fungicides)

IT *Phytophthora infestans*  
(control of, on tomato, by imidazole-contg. fungicides)

IT *Bacillus thuringiensis*  
(fungicidal compns. contg. imidazoles and)

IT Fungicides and Fungistats  
(agrochem., imidazole-contg.)

IT Cucumber  
(disease, downy mildew, control of, by imidazole-contg. fungicides)

IT Cucumber  
(disease, gray mold, control of, by imidazole-contg. fungicides)

IT Tomato  
(disease, late blight, control of, by imidazole-contg. fungicides)

IT Rice  
(disease, sheath blight, control of, by imidazole-contg. fungicides)

IT 127098-02-6

RL: BIOL (Biological study)  
(cucumber downy mildew and rice sheath blight control by, synergism in)

IT 127098-01-5  
RL: BIOL (Biological study)  
(cucumber downy mildew control by, synergism in)

IT 39148-24-8, Fosetyl-Al  
RL: BIOL (Biological study)  
(cucumber downy mildew response to)

IT 127098-03-7 127098-04-8  
RL: BIOL (Biological study)  
(cucumber gray mold control by, synergism in)

IT 1085-98-9, Dichlofluanid 32809-16-8, Procymidone  
RL: BIOL (Biological study)  
(cucumber gray mold response to)

IT 61278-81-7  
RL: BIOL (Biological study)  
(formyl by ethoxymethylimidazole prepn. from)

IT 1897-45-6, Chlorothalonil 8018-01-7, Mancozeb  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(fungicidal activity of, against tomato late blight)

IT 2439-01-2 68694-11-1  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(fungicidal activity of, against tomato late blight, imidazoles in relation to)

IT 127069-88-9 127097-89-6  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(fungicidal activity of, against tomato late blight, synergism in)

IT 127020-07-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and dehydrogenation of)

IT 120116-86-1P 120116-87-2P 120116-92-9P 120117-09-1P  
120117-21-7P 120117-22-8P 120117-23-9P 120117-43-3P 120117-55-7P  
120198-75-6P 120198-91-6P 127020-05-7P 127020-06-8P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. and fungicidal activity of)

IT 120116-77-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with Bu lithium)

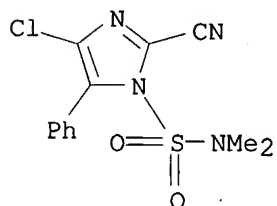
IT 120118-52-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with chlorosuccinimide)

IT 31722-49-3P, 2-Cyanoimidazole 120118-16-3P 120118-17-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with dimethylsulfamoyl chloride)

IT 99651-38-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with hydroxyl amine)

IT 120128-09-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

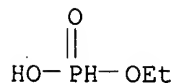
(prepn. and reaction of, with pyridinium chloride)  
 IT 120118-95-8P 120198-70-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 110644-89-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with Bu lithium and chloriodopropane)  
 IT 41270-76-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with chlorosuccinimide)  
 IT 6940-76-7, 1-Chloro-3-iodopropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with cyanodichlorodimethylsulfamoylimidazole)  
 IT 13360-57-1, Dimethylsulfamoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with cyanoimidazole)  
 IT 127098-05-9  
 RL: BIOL (Biological study)  
 (rice sheath blight control by, synergism in)  
 IT 66332-96-5, Flutolanil  
 RL: BIOL (Biological study)  
 (rice sheath blight response to)  
 IT 127097-99-8 127098-00-4  
 RL: BIOL (Biological study)  
 (tomato late blight control by)  
 IT 127097-90-9 127097-91-0 127097-92-1  
 127097-93-2 127097-94-3 127097-95-4  
 127097-96-5 127097-97-6 127097-98-7 127102-33-4  
 127123-53-9 127123-54-0  
 RL: BIOL (Biological study)  
 (tomato late blight control by, synergism in)  
 IT 1344-69-0, Copper hydroxide 17804-35-2, Benomyl 57837-19-1,  
 Metalaxyl 57966-95-7 77732-09-3, Oxadixyl 79622-59-6,  
 Fluazinam 84527-51-5  
 RL: BIOL (Biological study)  
 (tomato late blight response to)  
 IT 10004-44-1 127098-06-0 127098-07-1  
 RL: BIOL (Biological study)  
 (Pythium aphanidermatum growth inhibition by)  
 IT 127098-01-5  
 RL: BIOL (Biological study)  
 (cucumber downy mildew control by, synergism in)  
 RN 127098-01-5 HCAPLUS  
 CN Phosphonic acid, monoethyl ester, aluminum salt, mixt. with  
 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI)  
 (CA INDEX NAME)  
 CM 1  
 CRN 120116-87-2  
 CMF C12 H11 Cl N4 O2 S



CM 2

CRN 39148-24-8

CMF C2 H7 O3 P . 1/3 A1



1/3 A1

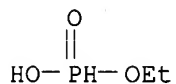
IT 39148-24-8, Fosetyl-Al

RL: BIOL (Biological study)

(cucumber downy mildew response to)

RN 39148-24-8 HCAPLUS

CN Phosphonic acid, monoethyl ester, aluminum salt (9CI) (CA INDEX NAME)



1/3 A1

IT 127098-03-7 127098-04-8

RL: BIOL (Biological study)

(cucumber gray mold control by, synergism in)

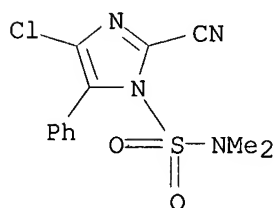
RN 127098-03-7 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-, mixt.  
with 1,1-dichloro-N-[(dimethylamino)sulfonyl]-1-fluoro-N-phenylmethanesulfenamide (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

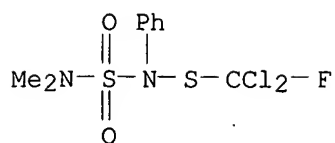
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 1085-98-9

CMF C9 H11 Cl2 F N2 O2 S2



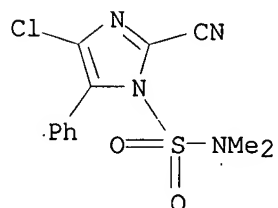
RN 127098-04-8 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-, mixt. with 3-(3,5-dichlorophenyl)-1,5-dimethyl-3-azabicyclo[3.1.0]hexane-2,4-dione (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

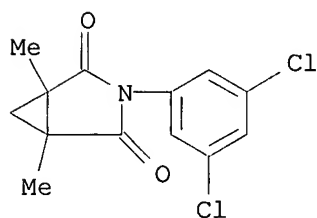
CMF C12 H11 C1 N4 O2 S



CM 2

CRN 32809-16-8

CMF C13 H11 C12 N O2

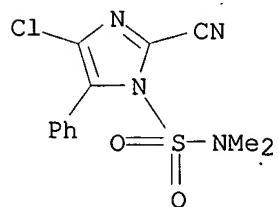


IT 120116-87-2P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. and fungicidal activity of)

RN 120116-87-2 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI) (CA INDEX NAME)



IT 127098-05-9

RL: BIOL (Biological study)  
(rice sheath blight control by, synergism in)

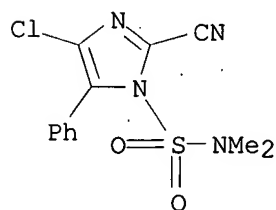
RN 127098-05-9 HCAPLUS

CN Benzamide, N-[3-(1-methylethoxy)phenyl]-2-(trifluoromethyl)-, mixt. with  
4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI)  
(CA INDEX NAME)

CM 1

CRN 120116-87-2

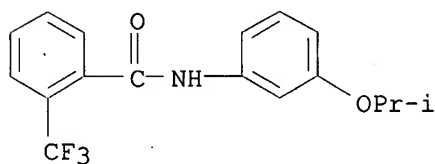
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 66332-96-5

CMF C17 H16 F3 N O2

IT 127097-91-0 127097-92-1 127097-93-2  
127097-95-4 127097-96-5 127102-33-4  
127123-54-0RL: BIOL (Biological study)  
(tomato late blight control by, synergism in)

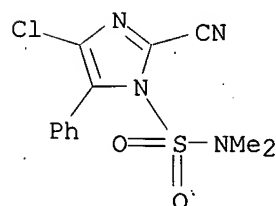
RN 127097-91-0 HCAPLUS

CN Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl  
ester, mixt. with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-  
sulfonamide (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

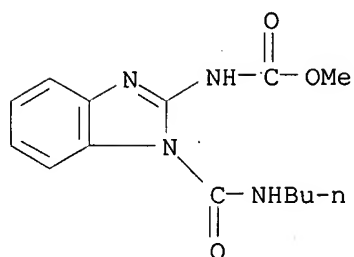
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 17804-35-2

CMF C14 H18 N4 O3



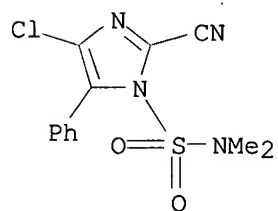
RN 127097-92-1 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-, mixt. with 3-chloro-N-[3-chloro-2,6-dinitro-4-(trifluoromethyl)phenyl]-5-(trifluoromethyl)-2-pyridinamine (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

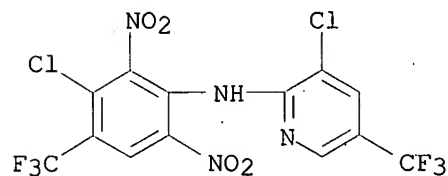
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 79622-59-6

CMF C13 H4 Cl2 F6 N4 O4



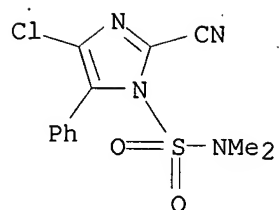
RN 127097-93-2 HCAPLUS

CN Acetamide, 2-cyano-N-[(ethylamino)carbonyl]-2-(methoxyimino)-, mixt. with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

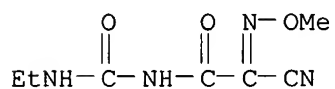
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 57966-95-7

CMF C7 H10 N4 O3



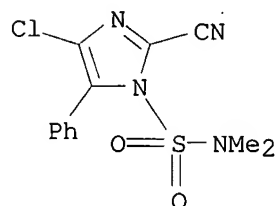
RN 127097-95-4 HCAPLUS

CN Acetamide, N-(2,6-dimethylphenyl)-2-methoxy-N-(2-oxo-3-oxazolidinyl)-,  
 mixt. with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-  
 sulfonamide (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

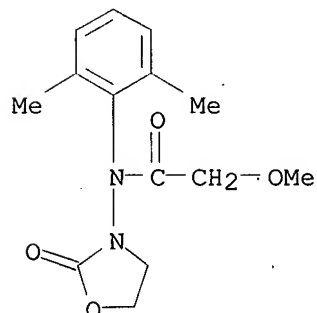
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 77732-09-3

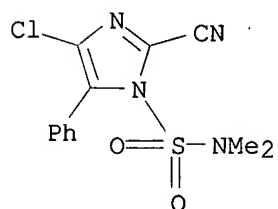
CMF C14 H18 N2 O4



RN 127097-96-5 HCAPLUS  
CN Benzamide, 4-chloro-N-(cyanoethoxymethyl)-, mixt. with  
4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI)  
(CA INDEX NAME)

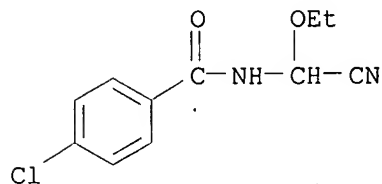
CM 1

CRN 120116-87-2  
CMF C12 H11 Cl N4 O2 S



CM 2

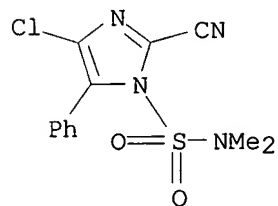
CRN 84527-51-5  
CMF C11 H11 Cl N2 O2



RN 127102-33-4 HCAPLUS  
CN Alanine, N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-, methyl ester, compd.  
with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide  
(1:1) (9CI) (CA INDEX NAME)

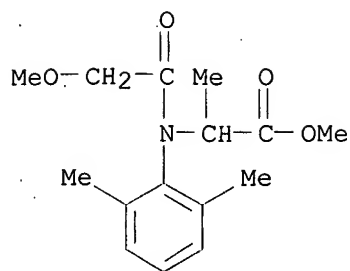
CM 1

CRN 120116-87-2  
CMF C12 H11 Cl N4 O2 S



CM 2

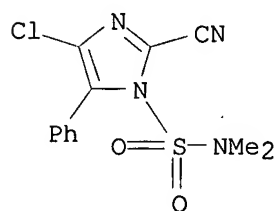
CRN 57837-19-1  
CMF C15 H21 N O4



RN 127123-54-0 HCAPLUS  
 CN Manganese, [[2-[(dithiocarboxy)amino]ethyl]carbamodithioato(2-)-  
 .kappa.S,.kappa.S']-, mixt. with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-  
 imidazole-1-sulfonamide and [[2-[(dithiocarboxy)amino]ethyl]carbamodithioa  
 to(2-)-.kappa.S,.kappa.S']zinc (9CI) (CA INDEX NAME)

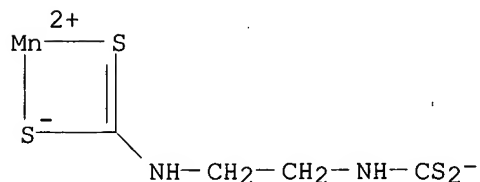
CM 1

CRN 120116-87-2  
 CMF C12 H11 Cl N4 O2 S



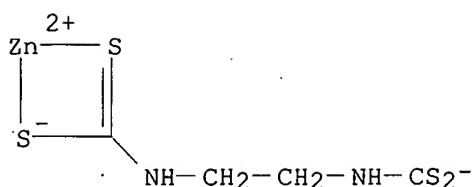
CM 2

CRN 12427-38-2  
 CMF C4 H6 Mn N2 S4  
 CCI CCS



CM 3

CRN 12122-67-7  
 CMF C4 H6 N2 S4 Zn  
 CCI CCS



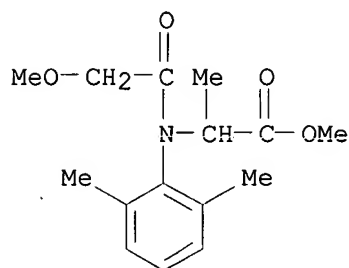
IT 57837-19-1, Metalaxyl 77732-09-3, Oxadixyl

RL: BIOL (Biological study)

(tomato late blight response to)

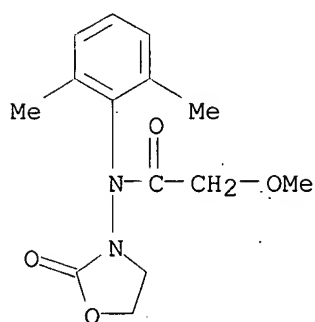
RN 57837-19-1 HCAPLUS

CN Alanine, N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-, methyl ester (9CI)  
(CA INDEX NAME)



RN 77732-09-3 HCAPLUS

CN Acetamide, N-(2,6-dimethylphenyl)-2-methoxy-N-(2-oxo-3-oxazolidinyl)-  
(9CI) (CA INDEX NAME)



IT 127098-06-0

RL: BIOL (Biological study)

(Pythium aphanidermatum growth inhibition by)

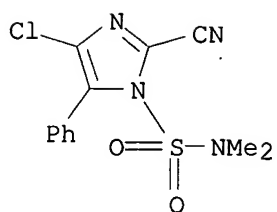
RN 127098-06-0 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-, mixt.  
with 5-methyl-3(2H)-isoxazolone (9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

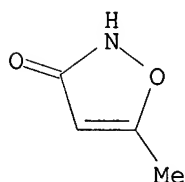
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 10004-44-1

CMF C4 H5 N O2



=&gt; d 1108 all hitstr tot

L108 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:517211 HCAPLUS

DN 131:195712

TI IKF-916 - a novel systemic fungicide for the control of oomycete plant diseases

AU Mitani, S.; Araki, S.; Matsuo, N.; Camblin, P.

CS Ishihara Sangyo Kaisha, Ltd., Shiga, Japan

SO Brighton Crop Protection Conference--Pests and Diseases (1998), (vol. 2), 351-358

CODEN: BCPDED; ISSN: 0955-1506

PB British Crop Protection Council

DT Journal

LA English

CC 5-2 (Agrochemical Bioregulators)

AB IKF-916 (4-chloro-2-cyano-N,N-dimethyl-5-p-tolylimidazole-1-sulfonamide) is a novel systemic cyanoimidazole fungicide discovered and currently under development by Ishihara Sangyo Kaisha Ltd. This fungicide is very active against a broad spectrum of Oomycetes (such as Phytophthora, Plasmopara, Pseudoperonospora, Pythium), and Plasmodiophoromycetes (Plasmodiophora brassicae). Glasshouse studies have shown excellent preventive activity along with stable residual activity and rain-fastness. In field studies, IKF-916 exhibits excellent performance for control of potato late blight, tomato late blight, grapevine downy mildew and cucumber downy mildew, at 60-100 g/ha. It has a good toxicol., environmental and eco-environmental profile.

ST IKF916 systemic fungicide Oomycetes plant

IT Oomycetes

Phytophthora

Plasmodiophora brassicae

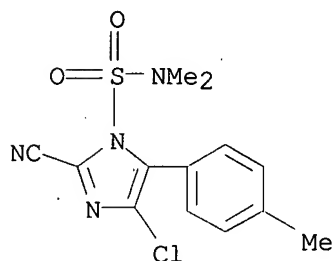
Plasmopara

Pseudoperonospora

Pythium

(IKF-916 as a systemic fungicide for the control of Oomycete plant

diseases)  
 IT Fungicides  
 (agrochem., systemic; IKF-916 as a systemic fungicide for the control of Oomycete plant diseases)  
 IT 120116-88-3, (4-Chloro-2-cyano-N,N-dimethyl-5-p-tolylimidazole-1-sulfonamide)  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (IKF-916 as a systemic fungicide for the control of Oomycete plant diseases)  
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
 (1) Mansfield, R; Brighton Crop Protection Conference-Pests and Diseases 1990, P867 HCAPLUS  
 (2) Wiggins, T; Biochemical Society Transactions 1993, V22, P68S  
 IT 120116-88-3, (4-Chloro-2-cyano-N,N-dimethyl-5-p-tolylimidazole-1-sulfonamide)  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (IKF-916 as a systemic fungicide for the control of Oomycete plant diseases)  
 RN 120116-88-3 HCAPLUS  
 CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



L108 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:367361 HCAPLUS

DN 125:33650

TI preparation of 1-substituted-2-cyanoimidazole compounds

IN Jonishi, Hisayoshi; Kimura, Tokiya; Kanamori, Fumio; Kanbayashi, Shigehisa; Wakabayashi, Tooru; Fukui, Fumihiro; Takenaka, Akimasa; Horiuchi, Noriyuki

PA Ishihara Sangyo Kaisha, Ltd., Japan

SO Can. Pat. Appl., 52 pp.

CODEN: CPXXEB

DT Patent

LA English

IC ICM C07D233-90

ICS C07C251-48

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

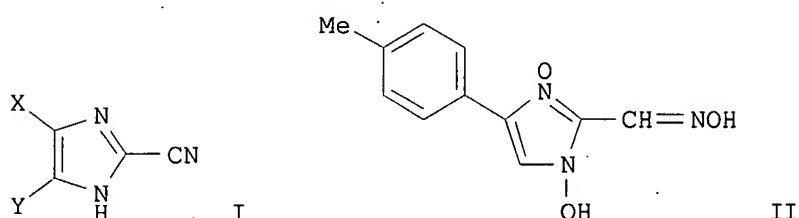
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2157753	AA	19960309	CA 1995-2157753	19950907 <--
	EP 705823	A1	19960410	EP 1995-306229	19950906 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08283243	A2	19961029	JP 1995-255614	19950906 <--
	EP 765872	A2	19970402	EP 1996-118827	19950906 <--
	EP 765872	A3	19970409		
	EP 765872	B1	19991201		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	AT 187168	E	19991215	AT 1996-118827	19950906 <--

ES 2140778	T3	20000301	ES 1996-118827	19950906 <--
JP 08208623	A2	19960813	JP 1995-284679	19951004 <--
JP 08225539	A2	19960903	JP 1995-301977	19951025 <--
US 5869683	A	19990209	US 1997-962648	19971103 <--

PRAI JP 1994-242164 19940908 <--  
 JP 1994-270321 19941007 <--  
 JP 1994-289267 19941028 <--  
 JP 1995-53629 19950216 <--  
 EP 1995-306229 19950906 <--  
 US 1995-524767 19950907 <--

OS CASREACT 125:33650; MARPAT 125:33650  
 GI



AB 2-Cyanoimidazole derivs. [I; X = (un)substituted Ph, alkyl; Y = Br, Cl], useful as agrochem. fungicides (no data), are prepd. A mixt. of 4-MeC<sub>6</sub>H<sub>4</sub>COCHCl<sub>2</sub>, NH<sub>2</sub>OH.H<sub>2</sub>SO<sub>4</sub>, and aq. glyoxal in MeOH was refluxed, the mixt. cooled to room temp., H<sub>2</sub>O was added with stirring to give imidazole II, which was treated with SOCl<sub>2</sub> in DMF with stirring at 25.degree., and the mixt. was cooled to 10.degree. and treated with SCl<sub>2</sub> to give I (X = p-tolyl, Y = Cl).

ST cyanoimidazole prepn agrochem fungicide

IT 5470-11-1P, Hydroxylamine hydrochloride 17628-76-1P 177762-66-2P  
 177762-67-3P 177762-68-4P 177762-69-5P 177762-70-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. of 1-substituted-2-cyanoimidazole compds.)

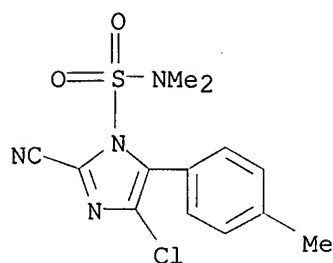
IT 120116-88-3P 120118-14-1P  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of 1-substituted-2-cyanoimidazole compds.)

IT 107-22-2, Glyoxal 122-00-9, 4'-Methylacetophenone 557-30-2, Glyoxime 619-41-0, 2-Bromo-4'-methylacetophenone 4974-59-8, 2,2-Dichloro-4'-methylacetophenone 7716-86-1, 4'-Bromo-2,2-dichloroacetophenone 10039-54-0, Hydroxylamine sulfate 13360-57-1, Dimethylsulfamoyl chloride 13664-98-7, 2,2-Dibromo-4'-methylacetophenone  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of 1-substituted-2-cyanoimidazole compds.)

IT 120116-88-3P  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of 1-substituted-2-cyanoimidazole compds.)

RN 120116-88-3 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



L108 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1992:647133 HCAPLUS

DN 117:247133

TI Synergistic agrochemical fungicides containing thiazolecarboxamides and imidazoles

IN Tamaoki, Masahiro

PA Sumitomo Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

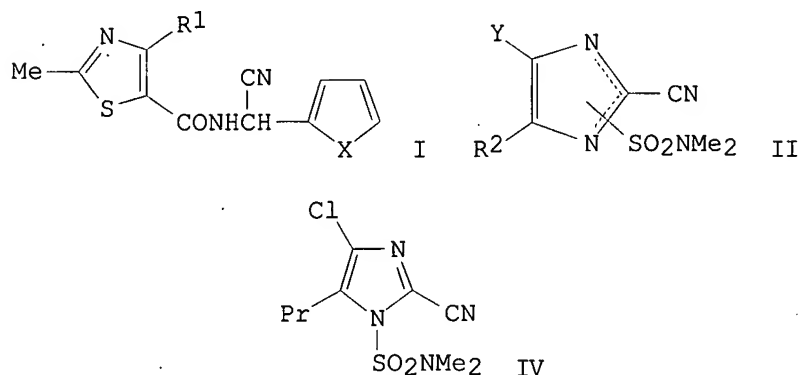
IC ICM A01N043-78

ICI A01N043-78, A01N043-50

CC 5-2 (Agrochemical Bioregulators)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04154704	A2	19920527	JP 1990-213931	19900810 <--
PRAI	JP 1990-183268		19900710 <--		
OS	MARPAT 117:247133				
GI					



AB Agrochem. fungicides contain thiazolecarboxamides I (R1 = Me, Et; X = O, S) and imidazoles II [R2 = (halo)alkyl, Ph; Y = halo] as active ingredients. Foliar application of 25 ppm I (R1 = Me, X = O) (III) and 25 ppm IV to cucumber showed 100% control of Pseudoperonospora cubensis, vs. 85% and 70%, for 50 ppm III and 50 ppm IV themselves, resp. Formulation examples are given.

ST fungicide agrochem thiazolecarboxamide imidazole synergism

IT Fungicides and Fungistats

(synergistic, contg. thiazolecarboxamides and imidazoles, agrochem.)

IT 144422-23-1 144422-24-2 144440-65-3 144440-66-4  
144440-67-5 144717-26-0 144738-20-5

RL: BIOL (Biological study)  
(agrochem. fungicide, synergistic)

IT 144422-24-2 144440-65-3 144717-26-0

RL: BIOL (Biological study)  
(agrochem. fungicide, synergistic)

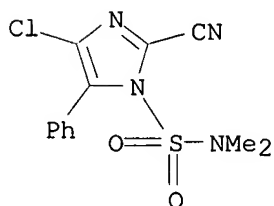
RN 144422-24-2 HCAPLUS

CN 5-Thiazolecarboxamide, N-(cyano-2-thienylmethyl)-4-ethyl-2-methyl-, mixt.  
with 4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide  
(9CI) (CA INDEX NAME)

CM 1

CRN 120116-87-2

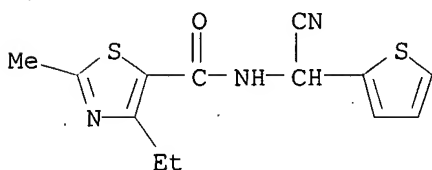
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 119778-33-5

CMF C13 H13 N3 O S2



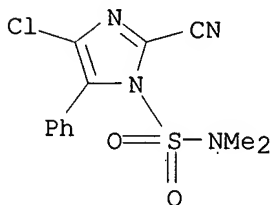
RN 144440-65-3 HCAPLUS

CN 5-Thiazolecarboxamide, N-(cyano-2-thienylmethyl)-2,4-dimethyl-, mixt. with  
4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI)  
(CA INDEX NAME)

CM 1

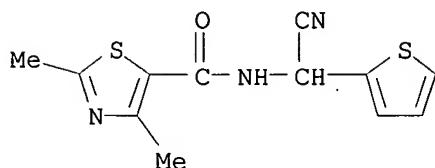
CRN 120116-87-2

CMF C12 H11 Cl N4 O2 S



CM 2

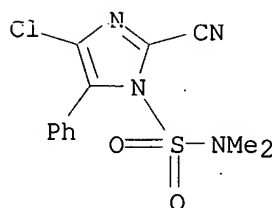
CRN 119778-30-2  
CMF C12 H11 N3 O S2



RN 144717-26-0 HCAPLUS  
CN 5-Thiazolecarboxamide, N-(cyano-2-furanylmethyl)-2,4-dimethyl-, mixt. with  
4-chloro-2-cyano-N,N-dimethyl-5-phenyl-1H-imidazole-1-sulfonamide (9CI)  
(CA INDEX NAME)

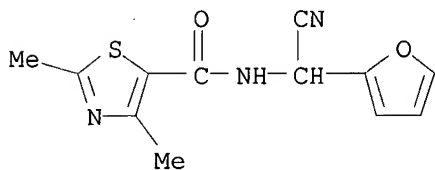
CM 1

CRN 120116-87-2  
CMF C12 H11 Cl N4 O2 S



CM 2

CRN 119778-28-8  
CMF C12 H11 N3 O2 S



L108 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1992:511613 HCAPLUS

DN 117:111613

TI Separation of imidazole compounds

IN Hase, Kuniaki; Kawashima, Junichi; Uenishi, Hisayoshi; Kimura, Tokya;  
Maeda, Masaru

PA Ishihara Sangyo Kaisha, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

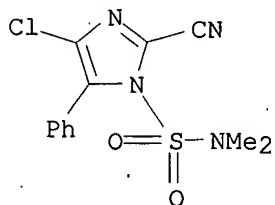
IC ICM C07D233-90

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04120063	A2	19920421	JP 1990-238237	19900907 <--
PRAI	JP 1990-238237		19900907 <--		
OS	MARPAT 117:111613				
AB	Imidazoles I [A = NSO <sub>2</sub> NR <sub>1</sub> R <sub>2</sub> ; B = N; R <sub>1</sub> , R <sub>2</sub> = alkyl; X = (un)substituted alkyl or phenyl; Y = Cl, Br], useful as pesticides (no data), are sepd. from their isomers mixts. by stereoselective hydrolysis of I (A = N; B = NSO <sub>2</sub> NR <sub>1</sub> R <sub>2</sub> ) in solvents in the presence of acid catalysts. A mixt. of 20.0 g 4(5)-chloro-2-cyano-5(4)-phenylimidazole, 15.5 g ClSO <sub>2</sub> NMe <sub>2</sub> , and Na <sub>2</sub> CO <sub>3</sub> in MEK was treated at 80-85.degree. for 2.5 h, extn. of the reaction mixt. by CH <sub>2</sub> Cl <sub>2</sub> -H <sub>2</sub> O gave a 65:30 mixt. of I (A = NSO <sub>2</sub> NMe <sub>2</sub> , B = N, X = Ph, Y = Cl) (II) and I (A = N, B = NSO <sub>2</sub> NMe <sub>2</sub> ), which was treated with HCl at room temp. for 40 min to give 6.74 g II.				
ST	cyanosulfamoylimidazole sepn pesticide; imidazole cyano sulfamoyl sepn pesticide; stereoselective hydrolysis cyanosulfamoylimidazole				
IT	Pesticides (cyanosulfamoylimidazoles)				
IT	Hydrolysis catalysts (stereoselective, acids, for cyanosulfoamoylimidazoles)				
IT	7647-01-0, Hydrochloric acid, uses RL: CAT (Catalyst use); USES (Uses) (catalyst, for stereoselective hydrolysis of sulfamoylimidazole)				
IT	<b>120116-87-2P</b> , 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. and sepn. of, from isomer mixts., by stereoselective hydrolysis, as pesticide)				
IT	120118-95-8P, 5-Chloro-2-cyano-1-dimethylsulfamoyl-4-phenylimidazole RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and stereoselective hydrolysis of, acid catalysts for)				
IT	75-09-2, Methylene chloride, uses RL: USES (Uses) (solvent, for stereoselective hydrolysis of sulfamoylimidazole)				
IT	13360-57-1, Dimethylsulfamoyl chloride RL: RCT (Reactant); RACT (Reactant or reagent) (sulfamoylation by, of cyanoimidazole)				
IT	120118-17-4 RL: RCT (Reactant); RACT (Reactant or reagent) (sulfamoylation of)				
IT	<b>120116-87-2P</b> , 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. and sepn. of, from isomer mixts., by stereoselective hydrolysis, as pesticide)				
RN	120116-87-2 HCAPLUS				
CN	1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI) (CA INDEX NAME)				

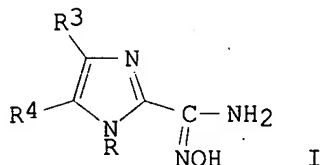


DN 116:123284  
 TI Preparation of imidazole amidoximes as agrochemical microbicides.  
 IN Suzuki, Hideo; Hanaue, Masami  
 PA Nissan Chemical Industries, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM C07D233-64  
 ICS A01N043-50; C07D233-68  
 CC 5-2 (Agrochemical Bioregulators)  
 Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03264564	A2	19911125	JP 1990-310076	19901115 <--
PRAI	JP 1990-23945		19900202	<--	
OS	MARPAT 116:123284				
GI					



AB Agrochem. microbicides contain the title compds. I [R = SO<sub>2</sub>NR<sub>1</sub>R<sub>2</sub>; R<sub>1</sub>, R<sub>2</sub> = alkyl; R<sub>3</sub> = H, halo; R<sub>4</sub> = (substituted) Ph] as active ingredients. Amidoximes I (R = H) are also claimed. H<sub>2</sub>NOH.HCl (1.1 g) in MeOH was treated with 1.0 g MeONa at room temp. for 1 h and refluxed with 3.1 g 2-cyano-4-chloro-1-dimethylsulfamoyl-5-phenylimidazole in MeOH for 3 h to give 2.4 g I (R = SO<sub>2</sub>NMe<sub>2</sub>, R<sub>3</sub> = Cl, R<sub>4</sub> = Ph), which was applied to cucumber at 1000 ppm to result in 100% control of Pseudoperonospora cubensis with no damage on cucumber, vs. 28% control, for zineb.

ST imidazole amidoxime prepn agrochem microbicide

IT Bactericides, Disinfectants, and Antiseptics  
 Fungicides and Fungistats  
 (imidazole amidoximes)

IT 120116-87-2  
 RL: PROC (Process)  
 (addn. of, by hydroxylamine)

IT 5470-11-1, Hydroxylamine hydrochloride  
 RL: PROC (Process)  
 (addn. of, to cyanoimidazole)

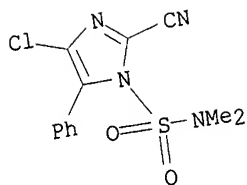
IT 139553-11-0P  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of, as agrochem. microbicide)

IT 120116-87-2  
 RL: PROC (Process)  
 (addn. of, by hydroxylamine)

RN 120116-87-2 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
 (CA INDEX NAME)

levy - 10 / 026700



L108 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1991:553106 HCAPLUS  
 DN 115:153106

TI Control of pests on plants with imidazoles and sorbitan higher fatty acid esters  
 IN Komyoji, Terumasa; Hiratsuka, Takeshi; Nakamura, Takekazu; Suzuki, Kazumi; Shindo, Takeshi

PA **Ishihara Sangyo Kaisha, Ltd., Japan**  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A01N043-50

CC 5-4 (Agrochemical Bioregulators)

FAN.CNT 1

PATENT NO.

KIND

DATE

A2

19910118  
 19890608 <--

APPLICATION NO.

DATE

JP 1989-146270

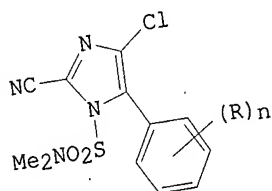
19890608 <--

PI JP 03011003

PRAI JP 1989-146270

OS MARPAT 115:153106

GI



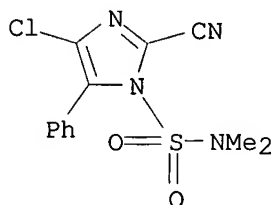
AB Pathogenic microbes, insects, termites, and nematodes on plants are controlled by application of aq. dispersions contg. imidazoles I (R = halo, alkyl, alkoxy; n = 0-5) and sorbitan higher fatty acid ester surfactants. A mixt. of I (n = 0) 20, Zeeklite (kaolin) 62.4, Carplex 80 12.0, Sorpol 5073 2.4, Sorpol 5060 1.6, and Lavelin FA-N 1.6 was dispersed in H2O at 31 ppm (as I) and mixed with 1 mL/L Applauch BI (sorbitan higher fatty acid esters). The dispersion was applied to tomato to show complete control of Phytophthora infestans after 5 days, vs. 30-60% control, without Applauch BI.

ST agrochem pesticide imidazole sorbitan ester  
 IT Insecticides  
 Nematocides

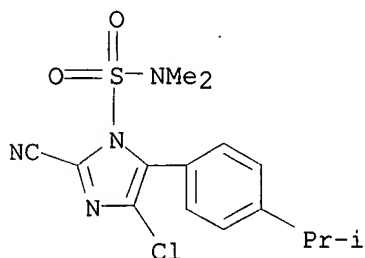
(contg. imidazoles and sorbitan higher fatty acid esters)  
 IT Acaricides  
 Bactericides, Disinfectants, and Antiseptics  
 Fungicides and Fungistats

(agrochem., contg. imidazoles and sorbitan higher fatty acid esters)  
 IT Fatty acids, esters  
 RL: BIOL (Biological study)

(esters, with sorbitan, agrochem. pesticides contg. imidazoles and)  
 IT 12441-09-7D, Sorbitan, higher fatty acid esters 136217-35-1, Applauch BI  
 RL: BIOL (Biological study)  
 (agrochem. pesticides contg. imidazoles and)  
 IT 120116-87-2 120116-92-9 120117-02-4 120117-14-8  
 RL: BIOL (Biological study)  
 (agrochem. pesticides contg. sorbitan fatty acid esters and)  
 IT 120116-87-2 120117-02-4  
 RL: BIOL (Biological study)  
 (agrochem. pesticides contg. sorbitan fatty acid esters and)  
 RN 120116-87-2 HCAPLUS  
 CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
 (CA INDEX NAME)



RN 120117-02-4 HCAPLUS  
 CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



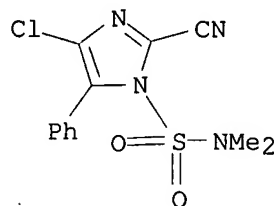
L108 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1991:143421 HCAPLUS  
 DN 114:143421  
 TI Preparation of imidazoles as intermediates for agrochemical pesticides, medical microbicides, and herbicides  
 IN Shigehara, Itaru; Nakajima, Toshio; Nishimura, Shigeyuki; Oshima, Takeshi; Fukui, Fumihito  
 PA Ishihara Sangyo Kaisha, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C07D233-58  
 ICS C07D233-64; C07D233-68  
 ICA A01N043-50  
 CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
 Section cross-reference(s): 1, 5  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02262560	A2	19901025	JP 1989-339174	19891227 <--
PRAI	JP 1988-329841		19881227	<--	

levy - 10 / 026700

- OS MARPAT 114:143421  
 GI For diagram(s), see printed CA Issue.  
 AB Imidazoles I [X = (halo)methyl; Y = H, Cl, Br; Z = H, (halo)alkyl, (halo)phenyl; if Y = H, Z = Ph, then X .noteq. CF<sub>3</sub>, Me; if Y = H, then Z .noteq. H, Me] are prepd. Compd. 4-chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole (prepn. given) gave complete control of Pseudoperonospora cubensis at 125 ppm.
- ST imidazole prepn agrochem microbicide intermediate; medical microbicide intermediate imidazole prepn; herbicide intermediate imidazole prepn
- IT Herbicides  
 (intermediates for, imidazoles as)
- IT Bactericides, Disinfectants, and Antiseptics  
 (agrochem., intermediates for, imidazoles as)
- IT 353-85-5, Trifluoroacetonitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (addn. of methanol to)
- IT 67-56-1, Methanol, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (addn. of, to trifluoroacetonitrile)
- IT 13360-57-1, Dimethylsulfamoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with chlorocyanophenylimidazole)
- IT 532-27-4, Phenacyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclocondensation of, with acetamide)
- IT 613-89-8, Phenacetylamine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclocondensation of, with acetimidate)
- IT 60-35-5, Acetamide, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclocondensation of, with phenacyl chloride)
- IT 354-38-1, Trifluoroacetamide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dehydration of)
- IT 13739-48-5P 41270-76-2P 81769-64-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT.  
 (Reactant or reagent)
- IT 120118-17-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and chlorination of)
- IT 815-07-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)
- IT 120118-95-8P, 5-Chloro-2-cyano-1-dimethylsulfamoyl-4-phenylimidazole  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and cyclocondensation of, with phenacetylamine)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of, as agrochem. fungicide)
- IT 132758-87-3P 132758-88-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, as intermediate for agrochem. microbicide)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of, as agrochem. fungicide)

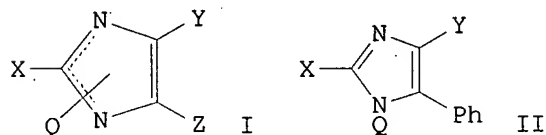
RN 120116-87-2 HCAPLUS  
 CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
 (CA INDEX NAME)



L108 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1991:42785 HCAPLUS  
 DN 114:42785  
 TI Preparation of 2-cyanoimidazoles as biocides  
 IN Shigehara, Itaru; Nakajima, Toshio; Nishimura, Shigeyuki; Ohshima, Takeshi  
 PA **Ishihara Sangyo Kaisha, Ltd., Japan**  
 SO Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM C07D233-90  
 ICS A01N043-50; C07F007-08; A61K031-415  
 CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
 Section cross-reference(s): 1, 5

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 365030	A1	19900425	EP 1989-119518	19891020 <--
	EP 365030	B1	19940126		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 02262562	A2	19901025	JP 1989-268716	19891016 <--
	US 5023336	A	19910611	US 1989-424630	19891020 <--
	AT 100800	E	19940215	AT 1989-119518	19891020 <--
	ES 2061879	T3	19941216	ES 1989-119518	19891020 <--
PRAI	JP 1988-264868		19881020	<--	
	JP 1988-308678		19881206	<--	
	EP 1989-119518		19891020	<--	
OS	MARPAT 114:42785				
GI					



AB The title compds. [I; Q = H, SO<sub>2</sub>R<sub>1</sub>, CHR<sub>2</sub>R<sub>3</sub>; R<sub>1</sub> = alkyl, dialkylamino, (alkyl)phenyl; R<sub>2</sub> = H, Me, alkoxy; R<sub>3</sub> = alkoxy, OCH<sub>2</sub>CH<sub>2</sub>SiMe<sub>3</sub>, (un)substituted Ph; X = CO<sub>2</sub>T, CONH<sub>2</sub>; T = H, alkyl, Ph, PhCH<sub>2</sub>; Y = H, Cl, Br; Z = (halo)alkyl, (un)substituted Ph] were prepd. Thus, imidazole II (Q = SO<sub>2</sub>NMe<sub>2</sub>, X = Y = H) (prepn. given) was stirred, in turn, with BuLi and ClCO<sub>2</sub>Et and the product converted in 2 steps to II (Q = Y = H, X = CONH<sub>2</sub>) which was dehydrated and the product chlorinated to give, after sulfamoylation, II (Q = SO<sub>2</sub>NMe<sub>2</sub>, X = cyano, Y = Cl). The latter gave complete control of downy mildew on cucumber seedlings when sprayed at 125

ppm.

ST cyanoimidazole prepn biocide; imidazole cyano prepn biocide

IT Bactericides, Disinfectants, and Antiseptics  
Fungicides and Fungistats  
(agrochem., cyanoimidazoles)

IT Fungicides and Fungistats  
(medical, cyanoimidazoles)

IT 5468-37-1P, Phenacylamine hydrochloride 41270-75-1P 41270-76-2P  
55149-83-2P 58371-99-6P, 3-Bromo-5-chloro-2-pentanone 59554-91-5P  
120118-17-4P 120118-68-5P 120214-91-7P 129399-82-2P 129399-83-3P  
129399-86-6P 129399-87-7P 129399-88-8P 129725-47-9P 130281-10-6P  
130281-11-7P 130281-12-8P 130293-54-8P 130493-12-8P 130493-13-9P  
130493-14-0P 130493-15-1P 130493-16-2P 130493-17-3P 130493-18-4P  
130493-20-8P 130493-21-9P 130513-19-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, in prepn. of, in prepn. of biocides)

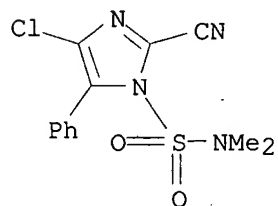
IT 120116-87-2P 120118-68-5P 120118-95-8P 127020-06-8P  
130281-13-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as biocide)

IT 70-11-1, Phenacyl bromide 107-30-2, Chloromethyl methyl ether 541-41-3  
623-49-4, Ethyl cyanoformate 670-95-1, 4(5-)Phenylimidazole 1074-82-4,  
Potassium phthalimide 5891-21-4, 5-Chloro-2-pentanone 6940-76-7,  
1-Chloro-3-iodopropane 13360-57-1, Dimethylsulfamoyl chloride  
15965-30-7, 4,5-Dichloroimidazole 16982-21-1 130493-19-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in prepn. of biocides)

IT 120116-87-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as biocide)

RN 120116-87-2 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



L108 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:591355 HCAPLUS

DN 113:191355

TI Preparation of formyl- or (hydroxyiminomethyl)imidazoles as intermediates  
for pesticides or medicinal bactericides

IN Shigehara, Itaru; Nakajima, Toshio; Nishimura, Shigeyuki; Oshima, Takeshi

PA Ishihara Sangyo Kaisha, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

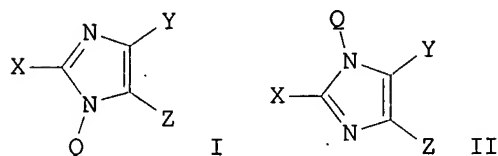
IC ICM C07D233-64  
ICS C07D233-64; C07D233-68; C07F007-08

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
Section cross-reference(s): 1, 5

FAN.CNT 1

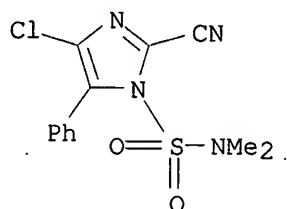
PATENT NO. KIND DATE APPLICATION NO. DATE

PI JP 02134369 A2 19900523 JP 1988-289556 19881116 <--  
 PRAI JP 1988-289556 19881116 <--  
 OS MARPAT 113:191355  
 GI



- AB The title compds. I and/or II [X = CHO, CH:NOH; Y = H, Cl, Br; Z = (halo-substituted) alkyl or phenyl; Q = H, SO<sub>2</sub>R<sub>1</sub>, CHR<sub>2</sub>R<sub>3</sub>; R<sub>1</sub> = alkyl, dialkylamino, (substituted) phenyl; R<sub>2</sub> = H, Me, alkoxy; R<sub>3</sub> = OCH<sub>2</sub>CH<sub>2</sub>SiMe<sub>3</sub>, alkoxy, (substituted) phenyl; except the case of X = CHO, Y = H, Z = Ph, and Q = SO<sub>2</sub>NMe<sub>2</sub>] are prepd. as intermediates for I and/or II (X = CN; Q = SO<sub>2</sub>NMe<sub>2</sub>) useful as agrochem. and horticultural pesticides or medicinal bactericides. Thus, chlorination of 4(5)-phenylimidazole followed by reflux with Me<sub>2</sub>NSO<sub>2</sub>Cl and K<sub>2</sub>CO<sub>3</sub> in Me<sub>2</sub>CO gave a mixt. I and II (X = H, Y = Cl, Z = Ph, Q = SO<sub>2</sub>NMe<sub>2</sub>) which was sepd. to give I (X = H, Y = Cl, Z = Ph, Q = SO<sub>2</sub>NMe<sub>2</sub>), which was treated with BuLi and DMF in THF to give I (X = CHO) (III). I (X = CN), prepd. from III, at 125 ppm showed 100% control of *Pseudoperonospora cubensis* in cucumber seedlings.
- ST formylimidazole prepn intermediate pesticide; hydroxyiminomethylimidazole prepn intermediate pesticide; imidazole formyl hydroxyiminomethyl intermediate pesticide; cyanodimethylsulfamoylimidazole prepn pesticide agrochem fungicide; medicinal bactericide cyanodimethylsulfamoylimidazole prepn
- IT Pesticides  
 (cyano(dimethylsulfamoyl)imidazoles)
- IT Fungicides and Fungistats  
 (agrochem., cyano(dimethylsulfamoyl)imidazoles)
- IT Bactericides, Disinfectants, and Antiseptics  
 (medical, cyano(dimethylsulfamoyl)imidazoles)
- IT 670-95-1, 4(5)-Phenylimidazole  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with dimethylsulfamoyl chloride)
- IT 6940-76-7, 1-Chloro-3-iodopropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with imidazole)
- IT 13360-57-1, Dimethylsulfamoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with imidazoles)
- IT 61278-81-7, 1-Diethoxymethylimidazole  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (formylation of)
- IT 129399-86-6P, 4,5-Dichloro-1-methoxymethylimidazole  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and condensation of, with chloriodopropane)
- IT 129399-82-2P, 5-Chloro-4-phenylimidazole 129399-88-8P,  
 5-Chloro-4-(3-chloropropyl)imidazole  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and condensation of, with dimethylsulfamoyl chloride)
- IT 66911-31-7P, 4,5-Dichloro-2-cyano-1-methoxymethylimidazole 129399-87-7P,  
 4-Chloro-5-(3-chloropropyl)-1-methoxymethylimidazole  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and deprotection of)

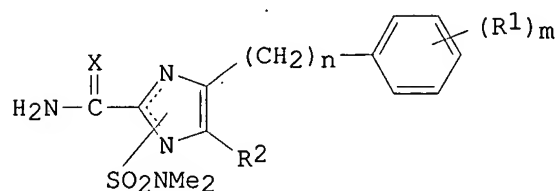
- IT 118876-86-1P, 1-Dimethylsulfamoyl-5-phenylimidazole 129399-78-6P,  
1-Dimethylsulfamoyl-4-phenylimidazole 129399-83-3P, 4-Chloro-1-  
dimethylsulfamoyl-5-phenylimidazole 129399-89-9P, 4-Chloro-5-(3-  
chloropropyl)-1-dimethylsulfamoylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and formylation of)
- IT 99651-38-4P, 2-Formyl-1-diethoxymethylimidazole 129399-94-6P,  
4,5-Dichloro-2-formyl-1-methoxymethylimidazole 129725-42-4P,  
4-(3-Chloropropyl)-1-dimethylsulfamoylimidazole 129725-43-5P,  
5-(3-Chloropropyl)-1-dimethylsulfamoylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of)
- IT 31722-49-3P, 2-Cyanoimidazole 64737-58-2P; 4,5-Dichloro-2-cyanoimidazole  
129399-84-4P, 5-Chloro-1-dimethylsulfamoyl-4-phenylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)
- IT 41270-76-2P, 2-Cyano-5-phenylimidazole 56248-10-3P, 2-Formyl-5-  
phenylimidazole 118847-68-0P, 1-Dimethylsulfamoyl-2-(hydroxyiminomethyl)-  
4-phenylimidazole 120118-17-4P, 5-Chloro-2-cyano-4-phenylimidazole  
120118-68-5P, 5-Chloro-4-(3-chloropropyl)-2-cyanoimidazole 129399-79-7P,  
1-Dimethylsulfamoyl-2-formyl-4-phenylimidazole 129399-80-0P,  
1-Dimethylsulfamoyl-2-formyl-5-phenylimidazole 129399-81-1P,  
1-Dimethylsulfamoyl-2-(hydroxyiminomethyl)-5-phenylimidazole  
129399-85-5P, 4-Chloro-1-dimethylsulfamoyl-2-formyl-5-phenylimidazole  
129399-90-2P, 4-Chloro-5-(3-chloropropyl)-1-dimethylsulfamoyl-2-  
formylimidazole 129399-91-3P, 4-Chloro-5-(3-chloropropyl)-1-  
dimethylsulfamoyl-2-(hydroxyiminomethyl)imidazole 129399-92-4P,  
5-Chloro-4-(3-chloropropyl)-1-dimethylsulfamoyl-2-  
(hydroxyiminomethyl)imidazole 129725-44-6P, 2-(Hydroxyiminomethyl)-5-  
phenylimidazole 129725-45-7P, 2-(Acetoxyiminomethyl)-1-dimethylsulfamoyl-  
4-phenylimidazole 129725-46-8P, 2-(Acetoxyiminomethyl)-1-  
dimethylsulfamoyl-5-phenylimidazole 129725-47-9P, 5-(3-Chloropropyl)-2-  
cyanoimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as intermediate for pesticides or medicinal bactericides)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-  
phenylimidazole 120118-95-8P, 5-Chloro-2-cyano-1-dimethylsulfamoyl-4-  
phenylimidazole 127020-06-8P, 4-Chloro-5-(3-chloropropyl)-2-cyano-1-  
dimethylsulfamoylimidazole 129399-93-5P, 5-Chloro-4-(3-chloropropyl)-2-  
cyano-1-dimethylsulfamoylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as pesticide or medicinal bactericide)
- IT 107-30-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(protection by, of imidazole)
- IT 15965-30-7, 4,5-Dichloroimidazole  
RL: PROC (Process)  
(protection of, by methoxymethyl chloride)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-  
phenylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as pesticide or medicinal bactericide)
- RN 120116-87-2 HCAPLUS  
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



L108 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1990:567367 HCAPLUS  
 DN 113:167367  
 TI Preparation of imidazolecarbothioamide S-oxides as pesticides.  
 IN Shigehara, Itaru; Komiyoji, Terumasa; Nakajima, Toshio; Suzuki, Kazumi;  
 Oshima, Takeshi; Nishide, Hisaya; Yoshimura, Hideji  
 PA Ishihara Sangyo Kaisha, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C07D233-90  
 ICS A01N043-50  
 CC 5-2 (Agrochemical Bioregulators)  
 Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02104576	A2	19900417	JP 1988-258204	19881013 <--
PRAI	JP 1988-258204		19881013 <--		
OS	MARPAT 113:167367				
GI					



I

AB The title compds. I ( $R_1$  = halo,  $CF_3$ ,  $NO_2$ , cyano;  $R_2$  = Cl, Br, iodo;  $X$  = SO;  $m$  = 0-5;  $n$  = 0,1), are prepd. by oxidn. of carbothioamides I ( $X$  = S). 2-Cyano-4,5-dichloro-1-dimethylsulfamoylimidazole was lithiated and treated with  $PhCH_2Br$  in THF at  $-70^\circ$  to room temp. overnight. The condensate was treated with  $H_2S$  at room temp. for 30 min to give I ( $R_2$  = Cl,  $X$  = S,  $m$  = 0,  $n$  = 1), which (0.57 g) was oxidized with  $H_2O_2$  in AcONa-contg. AcOH at room temp. for 3 h to afford 0.5 g I ( $R_2$  = Cl,  $X$  = SO,  $m$  = 0,  $n$  = 1) (II). Cucumber was treated with 31 ppm II to show complete control of *Pseudoperonospora cubensis* after 6 days.

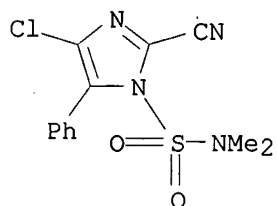
ST imidazolecarbothioamide oxide prepn pesticide; oxidn imidazolecarbothioamide

IT Insecticides  
 (imidazolecarbothioamide S-oxides as)

IT Acaricides  
 Bactericides, Disinfectants, and Antiseptics  
 Fungicides and Fungistats  
 (agrochem., imidazolecarbothioamide S-oxides as)

IT 7783-06-4, Hydrogen sulfide, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(addn. of, to cyanosulfamoylimidazole)  
IT 41270-76-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chlorination of)  
IT 110644-89-8  
RL: BIOL (Biological study)  
(condensation of, with benzyl bromide)  
IT 13360-57-1, Dimethylsulfamoyl chloride  
RL: BIOL (Biological study)  
(condensation of, with chlorocyanophenylimidazole)  
IT 100-39-0, Benzyl bromide  
RL: BIOL (Biological study)  
(condensation of, with chlorosulfamoylimidazole)  
IT 120118-17-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and condensation of, with dimethylsulfamoyl chloride)  
IT 120117-94-4P 128940-85-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and oxidn. of)  
IT 120116-87-2P 120117-49-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, with hydrogen sulfide)  
IT 120118-95-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 128646-13-9P 128968-03-6P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except  
adverse); BSU (Biological study, unclassified); SPN (Synthetic  
preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. of, as pesticide)  
IT 120116-87-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, with hydrogen sulfide)  
RN 120116-87-2 HCAPLUS  
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



L108 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:532184 HCAPLUS

DN 113:132184

TI 2-(Formyl or hydroximinomethyl)imidazole derivatives as intermediates for microbicides

IN Shigehara, Itaru; Nakajima, Toshio; Nishimura, Shigeyuki; Oshima, Takeshi

PA Ishihara Sangyo Kaisha, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

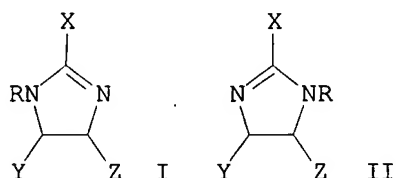
DT Patent

LA Japanese

IC ICM C07D233-64  
ICS C07D233-64; C07D233-68; C07F007-08  
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
Section cross-reference(s): 1

FAN.CNT 1

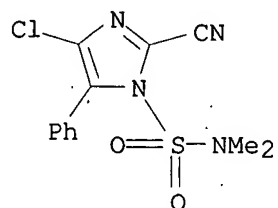
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02108670	A2	19900420	JP 1988-261057	19881017 <--
PRAI	JP 1988-261057		19881017 <--		
OS	MARPAT 113:132184				
GI					



- AB The title derivs. I and II [R = H, SO<sub>2</sub>R<sub>1</sub>, CHR<sub>2</sub>R<sub>3</sub>; R<sub>1</sub> = alkyl, dialkylamino, (alkyl)phenyl, R<sub>2</sub> = H, Me, alkoxy; R<sub>3</sub> = alkoxy, OCH<sub>2</sub>CH<sub>2</sub>SiMe<sub>3</sub>, (alkyl)phenyl, (alkoxy)phenyl; X = CHO, CH:NOH; Y = H, Cl, Br; Z = C<sub>2</sub>-6 n-(halo)alkyl, (halo)phenyl; except for I (R = SO<sub>2</sub>NMe<sub>2</sub>, X = CHO, Y = H, Z = Ph)] useful as intermediates for agrochem. or medical microbicides, are prepd. A soln. of 23.04 g 4(5)-phenylimidazole in acetone was treated with K<sub>2</sub>CO<sub>3</sub> under reflux for 2 h, after addn. of an acetone soln. of Me<sub>2</sub>NSO<sub>2</sub>Cl, the reaction mixt. was refluxed for 4.5 h to give 17.8 g 1-dimethylsulfamoyl-4(5)-phenylimidazole (III). A hexane soln. of BuLi was added dropwise to a THF soln. of 17 g III at -70.degree. over 30 min, the reaction mixt. was further stirred at -70.degree. for 30 min, treated with a THF soln. of DMF, and then gradually heated to room temp. over 15 h to give 12.8 g 1-dimethylsulfamoyl-2-formyl-4(5)-phenylimidazole. This (11.6 g) was treated with HONH<sub>2</sub>.HCl in pyridine under dropwise addn. of Ac<sub>2</sub>O at room temp. and the reaction mixt. was further stirred at 100.degree. for 12 h to give 5.55 g 2-cyano-4(5)-phenylimidazole (IV) via 1-dimethylsulfamoyl-2-(hydroximinomethyl)-4(5)-phenylimidazole. IV was chlorinated with N-chlorosuccinimide, followed by treatment with Me<sub>2</sub>NSO<sub>2</sub>Cl to give 4-chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole, which completely controlled downy mildew on cucumber.
- ST formylimidazole deriv prepn intermediate microbicide;  
imidazolecarbaldehyde deriv prepn intermediate microbicide;  
hydroximinomethylimidazole deriv prepn intermediate microbicide; agrochem fungicide intermediate formylimidazole deriv
- IT Bactericides, Disinfectants, and Antiseptics  
Fungicides and Fungistats  
(agrochem., intermediates for, (formyl or hydroxyiminomethyl)imidazole derivs. as)
- IT Bactericides, Disinfectants, and Antiseptics  
Fungicides and Fungistats  
(medical, intermediates for, (formyl or hydroxyiminomethyl)imidazole derivs. as)
- IT 61278-81-7, 1-Diethoxymethylimidazole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(formylation of)
- IT 41270-76-2P, 2-Cyano-4-phenylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and chlorination of)
- IT 118847-68-0P, 1-Dimethylsulfamoyl-2-(hydroxyiminomethyl)-4-phenylimidazole

- 129399-81-1P, 1-Dimethylsulfamoyl-2-(hydroxyiminomethyl)-5-phenylimidazole  
129399-91-3P 129399-92-4P 129399-95-7P, 4,5-Dichloro-2-(hydroxyiminomethyl)-1-methoxymethylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and dehydration of, cyanoimidazole from)
- IT 129399-87-7P, 4-Chloro-5-(3-chloropropyl)-1-methoxymethylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and demethoxymethylation of)
- IT 118876-86-1P, 1-Dimethylsulfamoyl-5-phenylimidazole 129399-78-6P, 1-Dimethylsulfamoyl-4-phenylimidazole 129399-83-3P, 4-Chloro-1-dimethylsulfamoyl-5-phenylimidazole 129399-89-9P, 4-Chloro-5-(3-chloropropyl)-1-dimethylsulfamoylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and formylation of)
- IT 129399-79-7P, 1-Dimethylsulfamoyl-2-formyl-4-phenylimidazole  
129399-80-0P, 1-Dimethylsulfamoyl-2-formyl-5-phenylimidazole  
129399-86-6P, 4,5-Dichloro-1-methoxymethylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, in prepn. of agrochem. microbicides)
- IT 129399-90-2P, 4-Chloro-5-(3-chloropropyl)-1-dimethylsulfamoyl-2-formylimidazole 129399-94-6P, 4,5-Dichloro-2-formyl-1-methoxymethylimidazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with hydroxylamine)
- IT 120118-17-4P, 4-Chloro-2-cyano-5-phenylimidazole 120118-68-5P, 4-Chloro-5-(3-chloropropyl)-2-cyanoimidazole 129399-82-2P, 4-Chloro-5-phenylimidazole 129399-88-8P, 4-Chloro-5-(3-chloropropyl)imidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and N-dimethylsulfamoylation of)
- IT 64737-58-2P, 4,5-Dichloro-2-cyanoimidazole 99651-38-4P, 2-Formyl-1-diethoxymethylimidazole 120118-95-8P, 5-Chloro-2-cyano-1-dimethylsulfamoyl-4-phenylimidazole 129399-84-4P, 5-Chloro-1-dimethylsulfamoyl-4-phenylimidazole 129399-93-5P, 5-Chloro-4-(3-chloropropyl)-2-cyano-1-dimethylsulfamoylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole 127020-06-8P, 4-Chloro-5-(3-chloropropyl)-2-cyano-1-dimethylsulfamoylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as agrochem. microbicide)
- IT 56248-10-3P, 2-Formyl-4-phenylimidazole 129399-85-5P, 4-Chloro-2-formyl-1-dimethylsulfamoyl-5-phenylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as intermediate for agrochem. microbicides)
- IT 670-95-1, 4-Phenylimidazole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in prepn. of agrochem. microbicides)
- IT 15965-30-7, 4,5-Dichloroimidazole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(N-methoxymethylation of)
- IT 120116-87-2P, 4-Chloro-2-cyano-1-dimethylsulfamoyl-5-phenylimidazole  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as agrochem. microbicide)
- RN 120116-87-2 HCAPLUS
- CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)

(CA INDEX NAME)



L108 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:192824 HCAPLUS

DN 110:192824

TI Process for the preparation of sulfonylated imidazoles useful as fungicides, insecticides, and acaricides

IN Nasu, Rikuo; Komyoji, Terumasa; Suzuki, Kazumi; Nakajima, Toshio; Ito, Keiichiro; Ohshima, Takeshi; Yoshimura, Hideshi

PA **Ishihara Sangyo Kaisha, Ltd., Japan**

SO Braz. Pedido PI, 130 pp.

CODEN: BPXXDX

DT Patent

LA Portuguese

IC C07D233-84

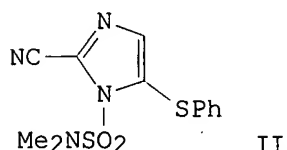
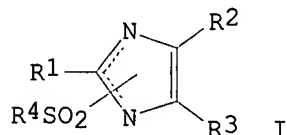
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 5

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BR 8801098	A	19881018	BR 1988-1098	19880311 <--
	CA 1339133	A1	19970729	CA 1988-560436	19880303 <--
	IN 169974	A	19920118	IN 1988-MA145	19880307 <--
	ZA 8801664	A	19881228	ZA 1988-1664	19880308 <--
	IL 85662	A1	19930221	IL 1988-85662	19880308 <--
	NO 8801066	A	19880914	NO 1988-1066	19880310 <--
	NO 172435	B	19930413		
	NO 172435	C	19930721		
	AU 8812883	A1	19880915	AU 1988-12883	19880310 <--
	AU 601820	B2	19900920		
	DK 8801332	A	19880914	DK 1988-1332	19880311 <--
	DK 171598	B1	19970217		
	HU 45844	A2	19880928	HU 1988-1180	19880311 <--
	HU 206245	B	19921028		
	EP 298196	A1	19890111	EP 1988-103885	19880311 <--
	EP 298196	B1	19930602		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	DD 281338	A5	19900808	DD 1988-313614	19880311 <--
	PL 156434	B1	19920331	PL 1988-271138	19880311 <--
	RO 100213	B1	19921120	RO 1988-132560	19880311 <--
	RO 104071	B1	19930415	RO 1988-141762	19880311 <--
	AT 90082	E	19930615	AT 1988-103885	19880311 <--
	SU 1836016	A3	19930823	SU 1988-4355479	19880311 <--
	ES 2007318	T3	19941101	ES 1988-103885	19880311 <--
	SK 278722	B6	19980114	SK 1988-1609	19880311 <--
	CZ 283597	B6	19980513	CZ 1988-1609	19880311 <--
	CN 88101228	A	19881207	CN 1988-101228	19880312 <--
	CN 1016309	B	19920422		
	US 4995898	A	19910226	US 1988-168070	19880314 <--
	RU 2014326	C1	19940615	RU 1992-5052192	19920730 <--
PRAI	JP 1987-58451	A	19870313	<--	
	JP 1987-82546	A	19870403	<--	

JP 1987-106577 A 19870430 <--  
 EP 1988-103885 A 19880311 <--  
 OS MARPAT 110:192824  
 GI



AB Title compds. I [R1 = cyano, CSNHR5; R2, R3 = H, halo, NO2, cyano, SiMe3, cycloalkyl, naphthyl, (un)substituted alkyl, alkenyl, alkoxy, Ph, furyl, thienyl, or pyridyl, SOnR7, NR8R9, CO(NH)mR10; R4 = alkyl, haloalkyl, cycloalkyl, Ph, thienyl, NR11R12; R5 = H, alkyl, COR6; R6 = alkyl, haloalkyl, Ph; R7 = alkyl, alkenyl, PhCH2, (un)substituted Ph or pyridyl; R8, R9 = alkyl; R10 = (un)substituted alkyl, alkoxy, Ph; R11, R12 = H, alkyl, haloalkyl, alkenyl; NR11R12 = pyrrolidino, piperidino, morpholino, thiomorpholino; both R11 and R12 .noteq. H; both R2 and R3 .noteq. halo; n = 0-2; m = 0,1] are prepd. as agricultural fungicides, insecticides, and acaricides. Sulfonylation of 2-cyanoimidazole by ClSO2NMe2 using K2CO3 in MeCN gave 2-cyano-1-(dimethylsulfamoyl)imidazole, which was lithiated by BuLi in THF and quenched by Ph2S2 (.ltoreq.-70.degree.) to give cyano(dimethylsulfamoyl)(phenylthio)imidazole II. At 1 kg/10 are, prior to sawing in infested soil, II completely prevented root tumor formation by Plasmodiphora brassicae for up to the 30th day. II was also 100% lethal to Tetranychus urticae adults and eggs at 200 and 800 ppm, resp.

ST sulfonylimidazole prepn fungicide insecticide acaricide  
 sulfonyl prepn fungicide insecticide acaricide

IT Acaricides  
 Insecticides  
 (sulfonylimidazoles)

IT Fungicides and Fungistats  
 (agrochem., sulfonylimidazoles)

IT Acaricides  
 (ovicidal, sulfonylimidazoles)

IT 120117-99-9 120118-00-5 120118-01-6 120118-02-7 120214-90-6  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
 (fungicidal activity of)

IT 41270-76-2P 58650-48-9P 79711-35-6P, 2-Cyano-4,5-dibromoimidazole  
 110644-89-8P 118847-53-3P 120118-03-8P 120118-04-9P 120118-05-0P  
 120118-06-1P 120118-07-2P 120118-08-3P 120118-09-4P 120118-10-7P  
 120118-11-8P 120118-12-9P 120118-13-0P 120118-14-1P 120118-15-2P  
 120118-16-3P 120118-17-4P 120118-18-5P 120118-19-6P 120118-20-9P  
 120118-21-0P 120118-22-1P 120118-23-2P 120118-24-3P 120118-25-4P  
 120118-26-5P 120118-27-6P 120118-28-7P 120118-29-8P 120118-30-1P  
 120118-31-2P 120118-32-3P 120118-33-4P 120118-34-5P 120118-35-6P

120118-36-7P	120118-37-8P	120118-38-9P	120118-39-0P	120118-40-3P
120118-41-4P	120118-42-5P	120118-43-6P	120118-44-7P	120118-45-8P
120118-46-9P	120118-47-0P	120118-48-1P	120118-49-2P	120118-50-5P
120118-51-6P	120118-52-7P	120118-53-8P	120118-54-9P	120118-55-0P
120118-56-1P	120118-57-2P	120118-58-3P	120118-59-4P	120118-60-7P
120118-61-8P	120118-62-9P	120118-63-0P	120118-64-1P	120118-65-2P
120118-66-3P	120118-67-4P	120118-68-5P	120118-69-6P	120118-70-9P
120118-71-0P	120118-72-1P	120118-73-2P	120118-74-3P	120118-75-4P
120118-76-5P	120118-77-6P	120118-78-7P	120118-79-8P	120118-80-1P
120118-81-2P	120118-82-3P	120118-83-4P	120118-84-5P	120118-85-6P
120118-86-7P	120118-87-8P	120118-88-9P	120118-89-0P	120118-90-3P
120118-91-4P	120118-92-5P	120118-93-6P	120118-94-7P	120118-99-2P
120119-01-9P	120214-91-7P	120214-92-8P	120214-93-9P	120214-94-0P
120214-95-1P	120214-96-2P			

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and reaction of, in synthesis of fungicidal and acaricidal sulfonylimidazoles)

IT 120118-97-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 120116-77-0P	120116-78-1P	120116-79-2P	120116-80-5P	120116-81-6P
120116-82-7P	120116-83-8P	120116-84-9P	120116-85-0P	120116-86-1P
120116-87-2P	120116-88-3P	120116-89-4P		
120116-90-7P	120116-91-8P	120116-92-9P	120116-93-0P	120116-94-1P
120116-95-2P	120116-96-3P	120116-97-4P	120116-98-5P	
120116-99-6P	120117-00-2P	120117-01-3P	120117-02-4P	
120117-03-5P	120117-04-6P	120117-05-7P	120117-06-8P	
120117-07-9P	120117-08-0P	120117-09-1P	120117-10-4P	120117-11-5P
120117-12-6P	120117-13-7P	120117-14-8P	120117-15-9P	120117-16-0P
120117-17-1P	120117-18-2P	120117-19-3P	120117-20-6P	
120117-21-7P	120117-22-8P	120117-23-9P	120117-24-0P	120117-25-1P
120117-26-2P	120117-27-3P	120117-28-4P	120117-29-5P	120117-30-8P
120117-31-9P	120117-32-0P	120117-33-1P	120117-34-2P	120117-35-3P
120117-36-4P	120117-37-5P	120117-38-6P	120117-39-7P	120117-40-0P
120117-41-1P	120117-42-2P	120117-43-3P	120117-44-4P	120117-45-5P
120117-46-6P	120117-47-7P	120117-48-8P	120117-49-9P	120117-50-2P
120117-51-3P	120117-52-4P	120117-53-5P	120117-54-6P	120117-55-7P
120117-56-8P	120117-57-9P	120117-58-0P	120117-59-1P	120117-60-4P
120117-61-5P	120117-62-6P	120117-63-7P	120117-64-8P	120117-65-9P
120117-66-0P	120117-67-1P	120117-68-2P	120117-69-3P	120117-70-6P
120117-71-7P	120117-72-8P	120117-73-9P	120117-74-0P	120117-75-1P
120117-76-2P	120117-77-3P	120117-78-4P	120117-79-5P	120117-80-8P
120117-81-9P	120117-82-0P	120117-83-1P	120117-84-2P	120117-85-3P
120117-86-4P	120117-87-5P	120117-88-6P	120117-89-7P	
120117-90-0P	120117-91-1P	120117-92-2P	120117-93-3P	
120117-94-4P	120117-95-5P	120117-96-6P	120117-97-7P	120117-98-8P
120118-95-8P	120118-96-9P	120119-00-8P	120128-09-8P	120128-10-1P
120142-22-5P	120142-23-6P	120142-24-7P	120198-64-3P	120198-65-4P
120198-66-5P	120198-67-6P	120198-68-7P	120198-69-8P	120198-70-1P
120198-71-2P	120198-72-3P	120198-73-4P	120198-74-5P	120198-75-6P
120198-76-7P	120198-77-8P	120198-78-9P	120198-79-0P	120198-80-3P
120198-81-4P	120198-82-5P	120198-83-6P	120198-84-7P	120198-85-8P
120198-86-9P	120198-87-0P	120198-88-1P	120198-89-2P	120198-90-5P
120198-91-6P	120198-92-7P	120198-93-8P	120198-94-9P	120198-95-0P
120198-96-1P	120198-97-2P	120198-98-3P	120214-78-0P	120214-79-1P
120214-80-4P	120214-81-5P	120214-82-6P	120214-83-7P	120214-84-8P
120214-85-9P	120214-86-0P	120214-87-1P	120214-88-2P	120214-89-3P
121545-30-0P				

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(prepn. of, as fungicide, insecticide, and acaricide)

IT 75-12-7, Formamide, reactions 79-03-8, Propanoyl chloride 107-08-4, n-Propyl iodide 670-91-7 670-95-1 882-33-7, Diphenyl disulfide 10147-37-2, Isopropylsulfonyl chloride 13360-57-1, Dimethylsulfamoyl chloride 31722-49-3, 2-Cyanoimidazole 35512-29-9 36960-22-2, 1-Hydroxy-3-methyl-2-butanone 120118-98-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in synthesis of fungicidal and acaricidal sulfonylimidazoles)

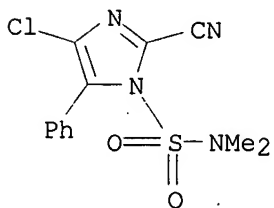
IT 120116-87-2P 120116-88-3P 120116-89-4P  
120116-97-4P 120116-99-6P 120117-02-4P  
120117-04-6P 120117-05-7P 120117-18-2P  
120117-87-5P 120117-88-6P 120117-91-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(prepn. of, as fungicide, insecticide, and acaricide)

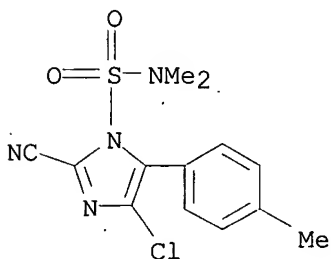
RN 120116-87-2 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



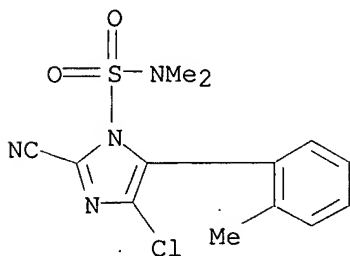
RN 120116-88-3 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



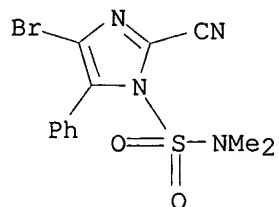
RN 120116-89-4 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



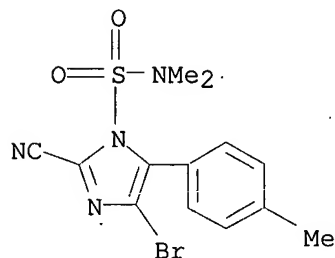
RN 120116-97-4 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



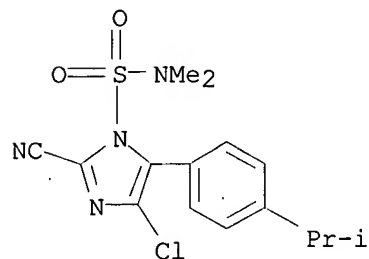
RN 120116-99-6 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



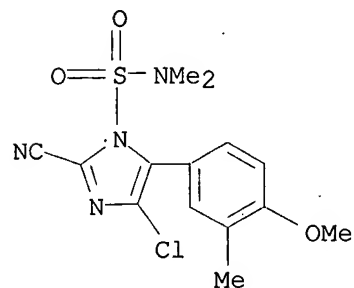
RN 120117-02-4 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



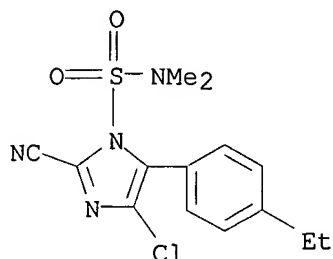
RN 120117-04-6 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



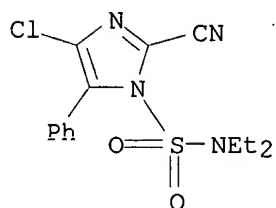
RN 120117-05-7 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



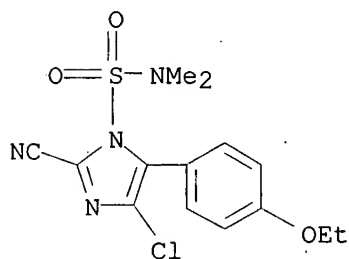
RN 120117-18-2 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-diethyl-5-phenyl- (9CI) (CA INDEX NAME)



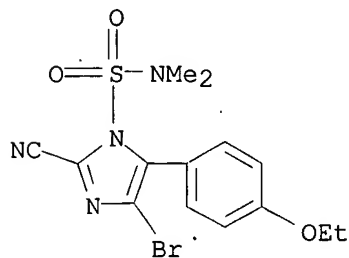
RN 120117-87-5 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 120117-88-6 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-5-(4-ethoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 120117-91-1 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-

of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 18 Jun 2003 VOL 138 ISS 25  
FILE LAST UPDATED: 17 Jun 2003 (20030617/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr

L110 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:739511 HCAPLUS

DN 130:11540

TI Composition and method for controlling harmful bio-organisms on plants

IN Matsuo, Norifusa; Mitani, Shigeru; Araki, Satoshi; Takii, Yasuko;  
Yamaguchi, Tomona

PA Ishihara Sangyo Kaisha, Ltd., Japan

SO PCT Int. Appl., 112 pp.

CODEN: PIXXD2

DT Patent

LA English

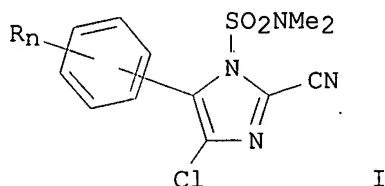
IC A01N043-50; A01N043-50; A01N061-00; A01N059-26

CC 5-2 (Agrochemical Bioregulators)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9848628	A1	19981105	WO 1998-JP1889	19980423	<--
	W:	AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	JP 11005706	A2	19990112	JP 1998-126711	19980420	<--
	AU 9870810	A1	19981124	AU 1998-70810	19980423	<--
	AU 752101	B2	20020905			
	EP 979034	A1	20000216	EP 1998-917663	19980423	<--
	EP 979034	B1	20030226			
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, RO				
	BR 9815483	A	20020205	BR 1998-15483	19980423	<--
	NZ 500548	A	20020828	NZ 1998-500548	19980423	<--
	AT 233049	E	20030315	AT 1998-917663	19980423	<--
	ZA 9803506	A	19981102	ZA 1998-3506	19980424	<--
	JP 11071209	A2	19990316	JP 1998-196624	19980626	<--
	JP 11106301	A2	19990420	JP 1998-196625	19980626	<--
	JP 11124305	A2	19990511	JP 1998-196626	19980626	<--
	US 6375965	B1	20020423	US 1999-403368	19991021	<--
	NO 9905164	A	19991221	NO 1999-5164	19991022	<--
	MX 9909802	A	20000731	MX 1999-9802	19991025	<--
	US 2002142021	A1	20021003	US 2001-26700	20011227	<--
PRAI	JP 1997-123382	A	19970425			<--
	JP 1997-190494	A	19970630			<--
	JP 1997-202575	A	19970711			<--
	JP 1997-227113	A	19970808			<--
	JP 1997-238973	A	19970819			<--
	WO 1998-JP1889	W	19980423			<--
	US 1999-403368	A3	19991021			
OS	MARPAT 130:11540					

GI



- AB Imidazoles I (R = lower alkyl, lower alkoxy; n = 1-5), when combined with .gtoreq.1 inorg. P compd. and/or .gtoreq.1 fungicide for Phycomycetes as an active ingredient, or with a spreader as an activity-enhancing ingredient, are useful in agriculture and horticulture for controlling fungi, bacteria, and insects which cause plant diseases. These compns. have a prolonged residual effect and so have preventive as well as curative activity; they are active systemically. Thus, a combination of 4-chloro-2-cyano-1-dimethylsulfamoyl-5-(4-methylphenyl)imidazole (II; 100 ppm) and Na3PO4.12H2O (2000 ppm), sprayed on cucumber plants at the 2-leaf stage 24 h after inoculation with downy mildew (*Pseudoperonospora cubensis*) spores, was 100% curative, compared to 5% for either component alone. A wettable powder was prepd. contg. II 5, Na3PO4.12H2O 16, diatomaceous earth 73, dialkyl sulfosuccinate 2, and polyoxyethylene alkylphenyl ether sulfate 4 parts.
- ST imidazole deriv agrochem pesticide; fungicide agrochem imidazole deriv
- IT Polyoxyalkylenes, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (alkylphenol ethers, mixts. with ligninsulfonic acid; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Lubricating oils  
 (diesel; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Agrochemical formulations  
 (dispersions; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Canola oil  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (ethoxylated, D 233N; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Resin acids  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (ethoxylated, Sorpol 7261; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Castor oil  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (ethoxylated; imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Fungicides  
 Pesticides  
 Surfactants  
 (imidazole-contg. compn. and method for controlling harmful bio-organisms on plants)
- IT Anilides  
 Corn oil  
 Fats and Glyceridic oils, biological studies  
 Hydrocarbon oils  
 Linseed oil  
 Paraffin oils  
 Polyphosphoric acids  
 Smectite-group minerals

- Soybean oil  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)
- IT Lubricating oils  
 (machine; imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)
- IT Pesticides  
 (organochlorine; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT Pesticides  
 (organophosphorus; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT Fungi  
 (phycomycetous; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT Amines, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (soya alkyl, ethoxylated; imidazole-contg. compn. and method for  
 controlling harmful bio-organisms on plants)
- IT Fungicides  
 (synergistic; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT Amines, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (tallow alkyl, ethoxylated, Rhodameen; imidazole-contg. compn. and  
 method for controlling harmful bio-organisms on plants)
- IT Fats and Glyceridic oils, biological studies  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (vegetable; imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)
- IT 9016-45-9  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (Agral Plus; imidazole-contg. compn. and method for controlling harmful  
 bio-organisms on plants)
- IT 577-11-7, Sodium di-2-ethylhexyl sulfosuccinate  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (Genopur SB 1970J; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT 137-20-2, Sodium oleylmethyltauride  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (Hostapon T Pow. H/C; imidazole-contg. compn. and method for  
 controlling harmful bio-organisms on plants)
- IT 9043-30-5, Genapol X 60  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (Lutensol TO 7; imidazole-contg. compn. and method for controlling  
 harmful bio-organisms on plants)
- IT 82-68-8, Pentachloronitrobenzene 107-91-5D, Cyanoacetamide, derivs..  
 151-21-3, Monogen Y-100, biological studies 621-82-9D, Cinnamic acid,  
 derivs. 1332-40-7, Copper oxychloride 1897-45-6 5138-18-1D,  
 Sulfosuccinic acid, dialkyl esters 6162-52-3D, derivs. 6303-21-5,  
 Phosphinic acid 7440-50-8D, Copper, compds., biological studies  
 7558-79-4, Disodium hydrogen phosphate 7664-38-2, Phosphoric acid,  
 biological studies 7664-38-2D, Phosphoric acid, alkyl esters, biological  
 studies 7723-14-0D, Phosphorus, inorg. compds., biological  
 studies 7758-11-4, Dipotassium hydrogen phosphate 8061-51-6, Sodium  
 ligninsulfonate 8061-52-7, Calcium lignosulfonate 8061-52-7D, Calcium  
 ligninsulfonate, alkyl esters 8062-15-5D, Ligninsulfonic acid, mixt.  
 with PEG alkylphenol ethers 9004-74-4D, mixt. with diglycerin diol fatty  
 acid ester 9004-82-4, Genapol LRO 9004-98-2 9005-02-1, Coadjuvant  
 Chevron 9005-63-4D, alkyl ethers 9005-64-5, Tween 20 9010-77-9,  
 Poligen WE3 9036-19-5 10101-89-0 12770-97-7D, Oxazolidinedione,  
 derivs. 13457-18-6, Pyrazophos 13517-23-2 13530-50-2, Aluminum

tris(dihydrogen phosphate) 13598-36-2, Phosphonic acid 17109-49-8, Edifenphos 20427-59-2, Cupric hydroxide 25322-68-3D, PEG, alkylphenol ethers, mixts. with ligninsulfonic acid 26087-47-8, Iprobenfos 26264-58-4, Supragil MNS/90 27306-78-1, Silwet L-77 29321-75-3 31799-71-0 34870-92-3D, alkylphenyl ethers 39148-24-8 39342-50-2, Citowett 57018-04-9, Tolclofos-methyl 57646-30-7, Furalaxyl 57837-19-1, Metalaxyl 57966-95-7, Cymoxanil 58318-62-0, Ethylan D 257 58810-48-3, Ofurace 60584-96-5 60828-78-6, Surfactant WK 61827-42-7, Rhodasurf 860P 63100-36-7, Atplus 411F 63704-92-7, Citowett Plus 67528-14-7, Triton ACTM 69581-33-5, Cyprofuram 71626-11-4, Benalaxyl 77732-09-3, Oxadixyl 83137-92-2, Atlox-BI 88650-63-9, Agri-Dex 98886-44-3, S-(sec-Butyl)-O-ethyl-2-oxo-3-thiazolidinyl phosphonothioate 99734-09-5, Soprophor BSU 110488-70-5, Dimethomorph 111417-43-7, Surfix 114797-22-7, Bond (latex) 120116-88-3

120117-04-6 120117-05-7 120117-91-1

123897-56-3, Lutensol ON 60 131807-57-3 131860-33-8 138463-82-8, Agral 30 142368-67-0, Prime Oil 143350-75-8, Kinetic 143390-89-0 152986-97-5, DyneAmic 164003-52-5, Scoil 165724-16-3, Latron B-1956 182761-09-7, Arma (surfactant) 182761-54-2, Slippa 182892-92-8, Agrimax 3H 215868-09-0, Needs 215868-14-7, Nisseki Noyaku Oil Emulsion 215868-16-9, Oleotan 215868-18-1, Sanpun Bordeaux Dust DL 215868-19-2, Seawet 215868-22-7, Atplus SL 92 215868-57-8, Sorpol 7337 215868-59-0, SP-Super 215868-60-3, Spray Sticker 215868-61-4, Sun Oil Adjuvant 215868-62-5, Suraid 215868-64-7, Surfate 30 215868-65-8, Surf Oil 215868-70-5, Tokusei Rino 215868-72-7, Trend 215868-77-2, X 2-5309 215868-93-2, Super Coral ADH 50 215868-97-6, Adherex MR 215868-99-8, Pepol AH 053 215869-01-5, Albol Ineum AK 215923-19-6, Applauch 215923-27-6, Oleo Rustica 11E 215923-30-1, Extravon 40 215923-34-5, Hi-Point 215923-35-6, Ishioil 215923-45-8, Alsoap 30

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(imidazole-contg. compn. and method for controlling harmful  
bio-organisms on plants)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Ishihara Mining & Chemical Co; EP 0298196 A 1989 HCAPLUS
- (2) Ishihara Mining & Chemical Co; EP 0337103 A 1989 HCAPLUS
- (3) Ishihara Sangyo Kaisha Ltd; JP 03011003 A HCAPLUS

IT 7723-14-0D, Phosphorus, inorg. compds., biological studies  
120116-88-3 120117-04-6 120117-05-7  
120117-91-1

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(imidazole-contg. compn. and method for controlling harmful  
bio-organisms on plants)

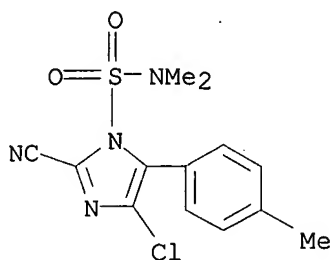
RN 7723-14-0 HCAPLUS

CN Phosphorus (8CI, 9CI) (CA INDEX NAME)

P

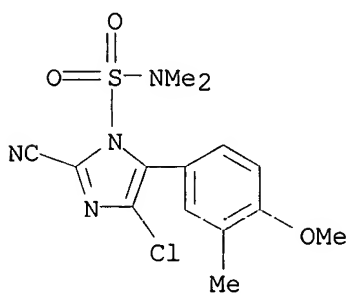
RN 120116-88-3 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



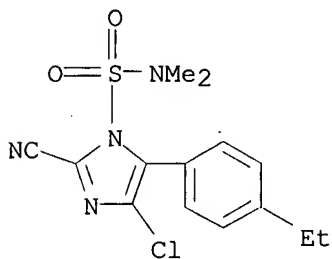
RN 120117-04-6 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



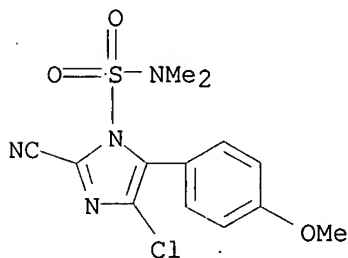
RN 120117-05-7 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)

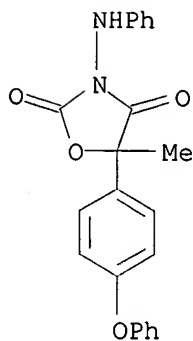


RN 120117-91-1 HCAPLUS

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



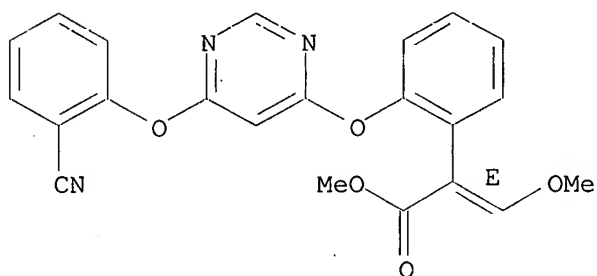
(CA INDEX NAME)



RN 131860-33-8 USPATFULL

CN Benzeneacetic acid, 2-[[6-(2-cyanophenoxy)-4-pyrimidinyl]oxy]-.alpha.-(methoxymethylene)-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

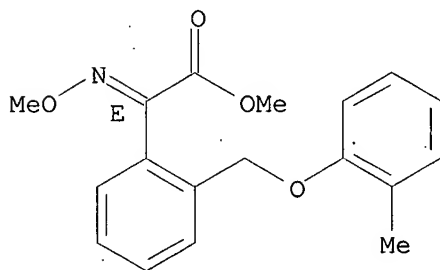
Double bond geometry as shown.



RN 143390-89-0 USPATFULL

CN Benzeneacetic acid, .alpha.-(methoxyimino)-2-[(2-methylphenoxy)methyl]-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L117 ANSWER 2 OF 7 USPATFULL

AN 2002:243650 USPATFULL

TI Novel fungicidal composition comprising a 2-imidazolin-5-one

IN Chazalet, Maurice, Anse, FRANCE

Latorse, Marie-Pascale, Sourcieux les Mines, FRANCE

Mercer, Richard, Ecully, FRANCE

PA Aventis CropScience, S.A., Lyon, FRANCE (non-U.S. corporation)

PI US 2002132841 A1 20020919

AI US 2002-99076 A1 20020313 (10)

RLI Division of Ser. No. US 1999-77988, filed on 14 Sep 1999, GRANTED, Pat.  
No. US 6384067

PRAI WO 1997-FR2170 19971202 <--

DT Utility

FS APPLICATION

LREP CONNOLLY BOVE LODGE & HUTZ LLP, 1220 Market Street, P.O. Box 2207,  
Wilmington, DE, 19899

CLMN Number of Claims: 23

ECL Exemplary Claim: 1

DRWN 9 Drawing Page(s)

LN.CNT 1041

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB 1) Fungicidal compositions comprising a compound (I) which is  
(4S)-4-methyl-2-methylthio-4-phenyl-1-phenylamino-2-imidazolin-5-one and  
a compound (II) chosen from the group comprising:

(IIA) propamocarb;

(IIB) the S-methyl ester of 1,2,3-benzothiadiazole-7-carbothioic acid,  
of formula: ##STR1##

(IIC) cyprodinil;

(IID) 2-hydroxybenzoic acid or salicylic acid, its esters and its salts,  
in particular the alkali-metal salts and the alkaline-earth metal salts;

the compound (IIF) or 8-t-butyl-2-(N-ethyl-N-n-propylamino)methyl-1,4-  
dioxaspiro[4.5]decane, also known as spiroxamine;

the compound (IIG) or isopropyl ester of [2-methyl-1-(1-p-  
tolylethylcarbonyl)propyl] acid, also known as fencaramide;

the compound (IIH) or 4-chloro-2-cyano-1-dimethylsulphamoyl-5-(4-  
methylphenyl)imidazole;

the compound (I)/compound (II) ratio being between 0.01 and 50,  
preferably between 0.01 and 10.

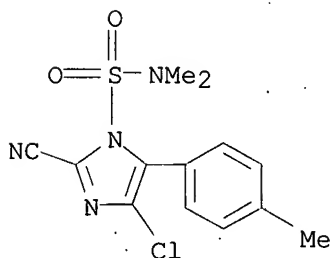
2) Process for curatively or preventively combating the phytopathogenic  
fungi of crops, characterized in that an effective and non-phytotoxic  
amount of one of these fungicidal compositions is applied to the aerial  
parts of the vegetation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120116-88-3D, mixts. with 2-imidazoline-5-one deriv.  
(synergistic fungicidal compns.)

RN 120116-88-3 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-  
methylphenyl)- (9CI) (CA INDEX NAME)



L117 ANSWER 3 OF 7 USPATFULL

AN 2002:88008 USPATFULL

TI Composition for controlling harmful bio-organisms and method for  
controlling harmful bio-organisms using the same

IN Matsuo, Norifusa, Shiga, JAPAN

Mitani, Shigeru, Shiga, JAPAN

Araki, Satoshi, Shiga, JAPAN

Takii, Yasuko, Shiga, JAPAN

Yamaguchi, Tomona, Shiga, JAPAN

PA Ishihara Sangyo Kaisha, Ltd., Osaka, JAPAN (non-U.S. corporation)

PI US 6375965 B1 20020423

WO 9848628 19981105

AI US 1999-403368 19991021 (9)

WO 1998-JP1889 19980423

19991021 PCT 371 date

PRAI JP 1997-123382 19970425 &lt;--

JP 1997-190494 19970630 &lt;--

JP 1997-202575 19970711 &lt;--

JP 1997-227113 19970808 &lt;--

JP 1997-238973 19970819 &lt;--

DT Utility

FS GRANTED

EXNAM Primary Examiner: Levy, Neil S.

LREP Sughrue Mion, PLLC

CLMN Number of Claims: 9

ECL Exemplary Claim: 1

DRWN 0 Drawing Figure(s); 0 Drawing Page(s)

LN.CNT 1756

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A composition for controlling harmful bio-organisms comprising (a) at  
least one imidazole compound represented by formula (I): ##STR1##

wherein R represents a lower alkyl group or a lower alkoxy group; and n  
represents an integer of 1 to 5, as an active ingredient, and (b) at  
least one inorganic phosphorus compound and/or at least one fungicide  
for Phycomycetes as an active ingredient or (c) a spreader as an  
activity-enhancing ingredient, and a method for controlling harmful  
bio-organisms comprising applying the composition for controlling  
harmful bio-organisms onto harmful bio-organisms.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 6303-21-5, Phosphinic acid 7440-50-8D, Copper, compds.,  
biological studies 7664-38-2, Phosphoric acid, biological  
studies 7664-38-2D, Phosphoric acid, alkyl esters, biological  
studies 7723-14-0D, Phosphorus, inorg. compds., biological  
studies 13598-36-2, Phosphonic acid 20427-59-2,  
Cupric hydroxide 57018-04-9, Tolclofos-methyl  
57646-30-7, Furalaxyl 57837-19-1, Metalaxyl  
58810-48-3, Ofurace 71626-11-4, Benalaxyl  
77732-09-3, Oxadixyl 110488-70-5, Dimethomorph  
120116-88-3 120117-04-6 120117-05-7  
120117-91-1 131807-57-3 131860-33-8  
143390-89-0

(imidazole-contg. compn. and method for controlling harmful  
bio-organisms on plants)

RN 6303-21-5 USPATFULL

CN Phosphinic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=PH<sub>2</sub>-OH

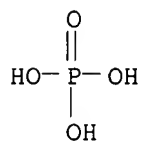
RN 7440-50-8 USPATFULL

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

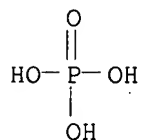
RN 7664-38-2 USPATFULL

CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7664-38-2 USPATFULL

CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



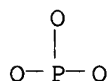
RN 7723-14-0 USPATFULL

CN Phosphorus (8CI, 9CI) (CA INDEX NAME)

P

RN 13598-36-2 USPATFULL

CN Phosphonic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



**FRAGMENT DIAGRAM IS INCOMPLETE**

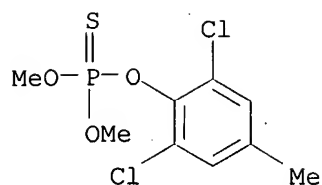
RN 20427-59-2 USPATFULL

CN Copper hydroxide (Cu(OH)<sub>2</sub>) (8CI, 9CI) (CA INDEX NAME)

HO-Cu-OH

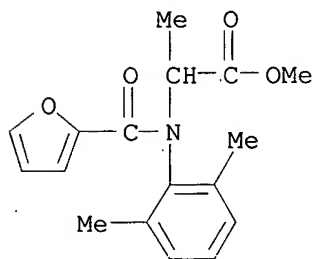
RN 57018-04-9 USPATFULL

CN Phosphorothioic acid, O-(2,6-dichloro-4-methylphenyl) O,O-dimethyl ester  
(9CI) (CA INDEX NAME)



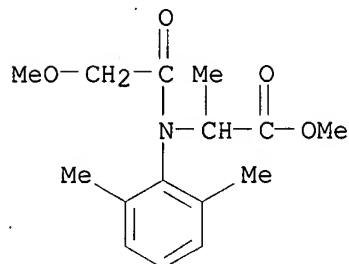
RN 57646-30-7 USPATFULL

CN Alanine, N-(2,6-dimethylphenyl)-N-(2-furanylcarbonyl)-, methyl ester (9CI)  
(CA INDEX NAME)



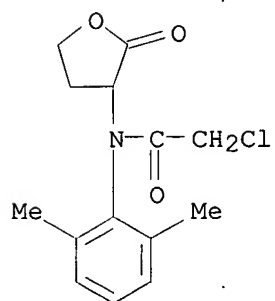
RN 57837-19-1 USPATFULL

CN Alanine, N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-, methyl ester (9CI)  
(CA INDEX NAME)



RN 58810-48-3 USPATFULL

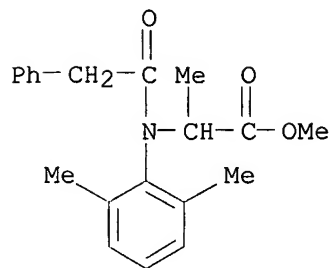
CN Acetamide, 2-chloro-N-(2,6-dimethylphenyl)-N-(tetrahydro-2-oxo-3-furanyl)-  
(9CI) (CA INDEX NAME)



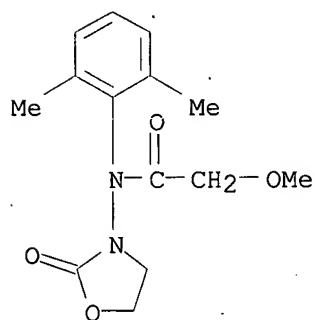
RN 71626-11-4 USPATFULL

CN Alanine, N-(2,6-dimethylphenyl)-N-(phenylacetyl)-, methyl ester (9CI) (CA

INDEX NAME)

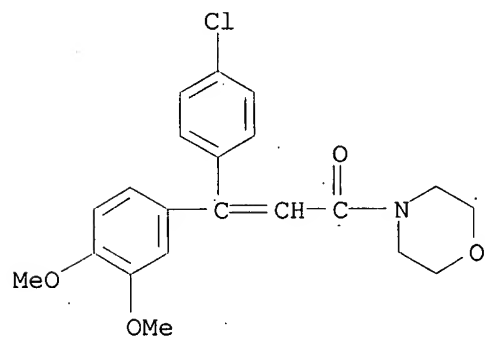


RN 77732-09-3 USPATFULL

CN Acetamide, N-(2,6-dimethylphenyl)-2-methoxy-N-(2-oxo-3-oxazolidinyl)-  
(9CI) (CA INDEX NAME)

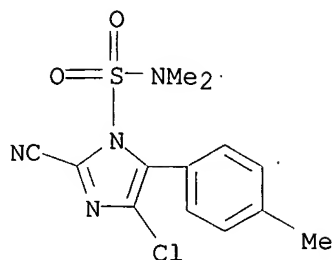
RN 110488-70-5 USPATFULL

CN Morpholine, 4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)-1-oxo-2-propenyl]- (9CI) (CA INDEX NAME)



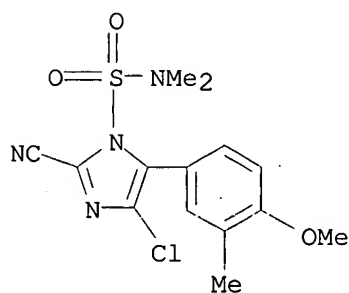
RN 120116-88-3 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



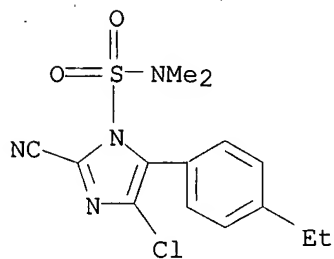
RN 120117-04-6 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



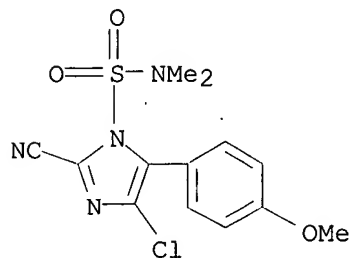
RN 120117-05-7 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 120117-91-1 USPATFULL

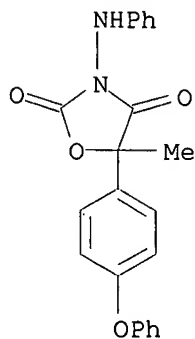
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 131807-57-3 USPATFULL

CN 2,4-Oxazolidinedione, 5-methyl-5-(4-phenoxyphenyl)-3-(phenylamino)- (9CI)

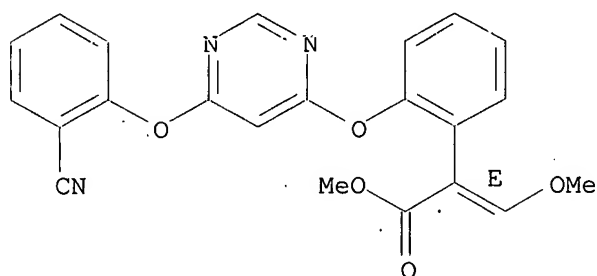
(CA INDEX NAME)



RN 131860-33-8 USPATFULL

CN Benzeneacetic acid, 2-[[6-(2-cyanophenoxy)-4-pyrimidinyl]oxy]-.alpha.-(methoxymethylene)-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

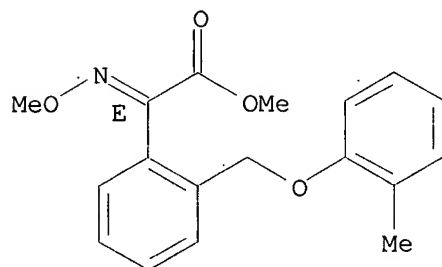
Double bond geometry as shown.



RN 143390-89-0 USPATFULL

CN Benzeneacetic acid, .alpha.-(methoxyimino)-2-[(2-methylphenoxy)methyl]-, methyl ester, (.alpha.E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L117 ANSWER 4 OF 7 USPATFULL

AN 1999:19342 USPATFULL

TI Processes for producing 1-substituted-2-cyanoimidazole compounds

IN Jonishi, Hisayoshi, Shiga, Japan

Kimura, Tokiya, Shiga, Japan

Kanamori, Fumio, Shiga, Japan

Kanbayashi, Shigehisa, Shiga, Japan

Wakabayashi, Tooru, Shiga, Japan

Fukui, Fumihiko, Shiga, Japan

Takenaka, Akimasa, Shiga, Japan  
 Horiuchi, Noriyuki, Shiga, Japan  
 PA Ishihara Sangyo Kaisha, Ltd., Osaka, Japan (non-U.S. corporation)  
 PI US 5869683 19990209  
 AI US 1997-962648 19971103 (8)  
 RLI Continuation of Ser. No. US 1995-524767, filed on 7 Sep 1995, now abandoned  
 PRAI JP 1994-242164 19940908 <--  
 JP 1994-270321 19941007 <--  
 JP 1994-289267 19941028 <--  
 JP 1995-53629 19950216 <--  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Morris, Patricia L.  
 LREP Sughrue, Mion, Zinn, Macpeak & Seas, PLLC  
 CLMN Number of Claims: 5  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 980

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for producing 1-substituted-2-cyanoimidazole compounds is described, which comprises (1) undergoing a reaction of a compound represented by formula (IV), hydroxylamine or a mineral acid salt thereof, and glyoxal or glyoxime to produce a compound represented by formula (III), (2) undergoing a reaction of the compound represented by formula (III) with thionyl chloride or thionyl bromide in the presence of N,N-dialkylamide to produce a reaction mixture, and then reacting the produced reaction mixture with sulfur chloride to produce a 2-cyanoimidazole compound represented by formula (II), and (3) undergoing a sulfamoylation reaction and an isomerization reaction of the 2-cyanoimidazole compound represented by formula (II) and a compound represented by formula (V) in the presence of at least one base selected from carbonates of alkali metals and bicarbonates of alkali metals and a polar solvent to produce a 1-substituted-2-cyanoimidazole compound represented by formula (I-b). The formulae and substituents formulae are specifically defined in the specification. ##STR1##

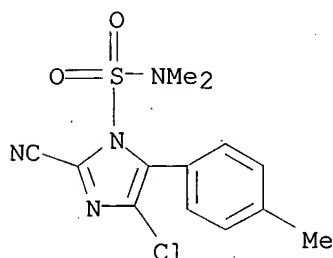
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120116-88-3P

(prepn. of 1-substituted-2-cyanoimidazole compds.)

RN 120116-88-3 USPTFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)-(9CI) (CA INDEX NAME)



L117 ANSWER 5 OF 7 USPTFULL

AN 91:46794 USPTFULL

TI Imidazole compound and process for preparing the same

IN Shigehara, Itaru, Shiga, Japan

Nakajima, Toshio, Shiga, Japan

Nishimura, Shigeyuki, Shiga, Japan

Ohshima, Takeshi, Shiga, Japan  
PA Ishihara Sangyo Kaisha Ltd., Osaka, Japan (non-U.S. corporation)  
PI US 5023336 19910611 <--  
AI US 1989-424630 19891020 (7)  
PRAI JP 1988-264868 19881020 <--  
JP 1988-308678 19881206 <--  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Ford, John M.  
LREP Sughrue, Mion, Zinn, Macpeak & Seas  
CLMN Number of Claims: 2  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 872

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An imidazole compound is disclosed, which is represented by formula (I):  
##STR1## wherein: X represents a --COOT group, in which T represents a  
hydrogen atom, an alkyl group, a benzyl group, or a phenyl group; or a  
--CONH.sub.2 group,

Y represents a hydrogen atom, a chlorine atom, or a bromine atom,

Z represents an alkyl group containing from 2 to 6 carbon atoms, which  
may be substituted with one or more halogen atoms; or a phenyl group  
which may be substituted with one or more halogen atoms or alkyl groups,  
and

Q represents a hydrogen atom; an --SO.sub.2 R.sup.1 group, in which  
R.sup.1 represents an alkyl group, a dialkylamino group, or a phenyl  
group which may be substituted with one or more alkyl groups; or a  
--CH(R.sup.2)(R.sup.3) group, in which R.sup.2 represents a hydrogen  
atom, a methyl group, or an alkoxy group, and R.sup.3 represents an  
alkoxy group, an --OCH.sub.2 CH.sub.2 Si (CH.sub.3) group, or a phenyl  
group which may be substituted with one or more alkyl groups or alkoxy  
groups,

provided that when Y and Q each represents a hydrogen atom and Z  
represents a phenyl group, X represents a group other than a  
--COOH-phenyl group, and a --CONH.sub.2 group; and that when Y and Q  
each represents a hydrogen atom and Z represents an n--C.sub.5 H.sub.11  
group, X represents a group other than a --COOH group and a --COOC.sub.2  
H.sub.5 group.

Processes for preparing imidazole compounds are also disclosed.

The imidazole compounds are useful as an intermediate for production of  
biocides for controlling harmful organisms in the agricultural and  
horticultural areas, or medical and pharmaceutical fungicides.

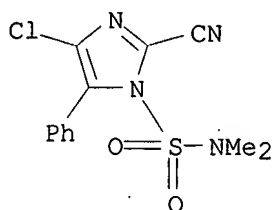
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120116-87-2P

(prepn. of, as biocide)

RN 120116-87-2 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



L117 ANSWER 6 OF 7 USPATFULL

AN 91:16806 USPATFULL

TI Imidazole compounds and biocidal composition comprising the same for controlling harmful organisms

IN Nasu, Rikuo, Shiga, Japan

Komyoji, Terumasa, Shiga, Japan

Nakajima, Toshio, Shiga, Japan

Suzuki, Kazumi, Shiga, Japan

Ito, Keiichiro, Shiga, Japan

Oshima, Takeshi, Shiga, Japan

Yoshimura, Hideshi, Shiga, Japan

PA Ishihara Sangyo Kaisha, Ltd., Osaka, Japan (non-U.S. corporation)

PI US 4995898 19910226 <--

AI US 1988-168070 19880314 (7)

PRAI JP 1987-58451 19870313 <--

JP 1987-82546 19870403 <--

JP 1987-106577 19870430 <--

DT Utility

FS Granted

EXNAM Primary Examiner: Raymond, Richard L.

LREP Sughrue, Mion, Zinn, Macpeak & Seas

CLMN Number of Claims: 9

ECL Exemplary Claim: 1,9

DRWN No Drawings

LN.CNT 2494

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel imidazole compounds are disclosed, which are represented by the following general formula: ##STR1## wherein: R.sub.1 represents a cyano group or a --CSNHR.sub.5 group, wherein R.sub.5 represents a hydrogen atom, a C.sub.1-4 alkyl group, or a --COR.sub.6 group, wherein R.sub.6 represents a C.sub.1-4 alkyl group, a halogenated C.sub.1-4 alkyl group, or a phenyl group;

R.sub.2 and R.sub.3 each represents a hydrogen atom; a halogen atom; a nitro group; a cyano group; a trimethylsilyl group; a C.sub.3-6 cycloalkyl group; a naphthyl group; a C.sub.1-12 alkyl group which is optionally substituted with one or more halogen atoms, hydroxyl groups, acetoxy groups, C.sub.1-4 alkoxy groups, halogenated C.sub.1-4 alkoxy groups, phenyl groups, halogenated phenyl groups, or C.sub.1-4 alkylated phenyl groups; a C.sub.2-10 alkenyl group which is optionally substituted with one or more halogen atoms; a C.sub.1-6 alkoxy group which is optionally substituted with one or more halogen atoms; a phenyl group which is optionally substituted with one or more halogen atoms, C.sub.1-4 alkyl groups, halogenated C.sub.1-4 alkyl groups, C.sub.1-4 alkoxy groups, halogenated C.sub.1-4 alkoxy groups, C.sub.1-4 alkylthio groups, halogenated C.sub.1-4 alkylthio groups, nitro groups, cyano groups, or 3,4-methylenedioxy groups; a furyl group which is optionally substituted with one or more halogen atoms or C.sub.1-4 alkyl groups; a thienyl group which is optionally substituted with one or more halogen atoms or C.sub.1-4 alkyl groups; a pyridyl group which is optionally substituted with one or more halogen atoms or C.sub.1-4 alkyl groups; an --SO.sub.n R.sub.7 group, wherein R.sub.7 represents a C.sub.1-6 alkyl

group, a C.sub.2-6 alkenyl group, a phenyl group which is optionally substituted with one or more halogen atoms, a benzyl group, a pyridyl group which is optionally substituted with one or more halogen atoms, C.sub.1-4 alkyl groups, or halogenated C.sub.1-4 alkyl groups; or an --NR.sub.8 R.sub.9 group, wherein R.sub.8 and R.sub.9 each represents a C.sub.1-4 alkyl group, and n is 0, 1, or 2; or a --CO(NH).sub.m R.sub.10 group, wherein R.sub.10 represents a C.sub.1-4 alkyl group which is optionally substituted with one or more halogen atoms, a C.sub.1-4 alkoxy group which is optionally substituted with one or more halogen atoms, or a phenyl group which is optionally substituted with one or more halogen atoms; and m is 0 or 1; and

R.sub.4 represents a C.sub.1-6 alkyl group which is optionally substituted with one or more halogen atoms; a C.sub.3-6 cycloalkyl group; a phenyl group; a thienyl group; or an --NR.sub.11 R.sub.12 group, wherein R.sub.11 and R.sub.12 each represents a hydrogen atom, a C.sub.1-4 alkyl group which is optionally substituted with one or more halogen atoms, a C.sub.2-4 alkenyl group, or R.sub.11 and R.sub.12 are combined with each other together with a nitrogen atoms adjacent thereto to form a pyrrolidinyl group, a piperidinyl group, a morpholino group, or a thiomorpholino group, provided that R.sub.11 and R.sub.12 are not simultaneously a hydrogen atom;

provided that R.sub.2 and R.sub.3 are not simultaneously a halogen atom. The compounds are effective as biocides.

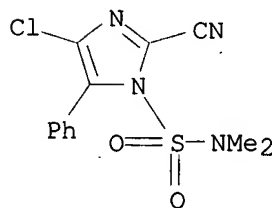
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120116-87-2P 120116-88-3P 120116-89-4P  
120116-97-4P 120116-99-6P 120117-02-4P  
120117-04-6P 120117-05-7P 120117-18-2P  
120117-87-5P 120117-88-6P 120117-91-1P

(prepn. of, as fungicide, insecticide, and acaricide)

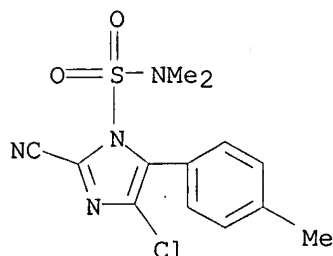
RN 120116-87-2 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



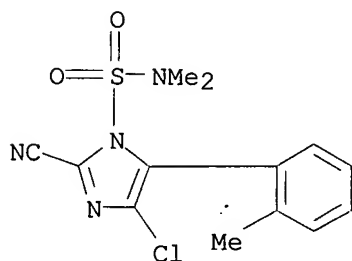
RN 120116-88-3 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



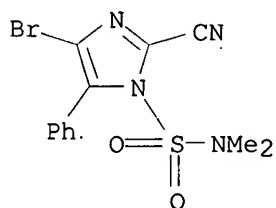
RN 120116-89-4 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



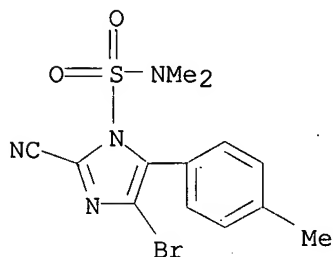
RN 120116-97-4 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



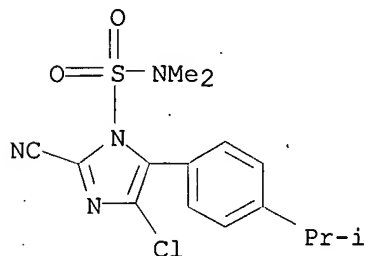
RN 120116-99-6 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 120117-02-4 USPATFULL

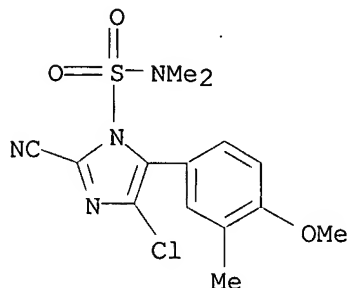
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 120117-04-6 USPATFULL

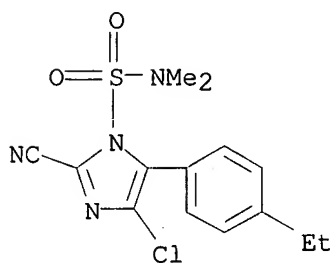
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-

N,N-dimethyl- (9CI) (CA INDEX NAME)



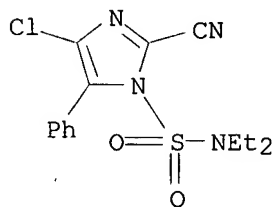
RN 120117-05-7 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



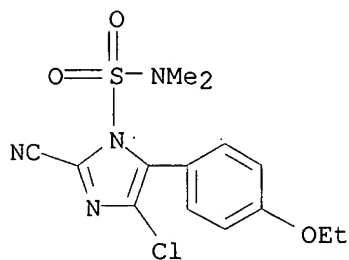
RN 120117-18-2 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-diethyl-5-phenyl- (9CI) (CA INDEX NAME)



RN 120117-87-5 USPATFULL

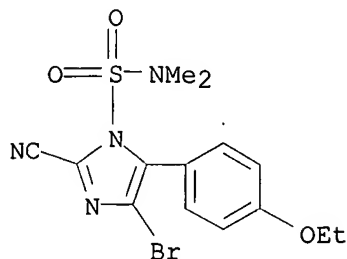
CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 120117-88-6 USPATFULL

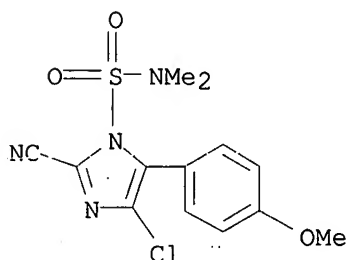
CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-5-(4-ethoxyphenyl)-N,N-

dimethyl- (9CI) (CA INDEX NAME)



RN 120117-91-1 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



L117 ANSWER 7 OF 7 USPATFULL

AN 90:60118 USPATFULL

TI Biocidal composition

IN Nasu, Rikuo, Kyoto, Japan

Komyoji, Terumasa, Shiga, Japan

Nakajima, Toshio, Shiga, Japan

Suzuki, Kazumi, Shiga, Japan

Ito, Keiichiro, Shiga, Japan

Ohshima, Tekeshi, Shiga, Japan

Yoshimura, Hideshi, Osaka, Japan

PA Ishihara Sangyo Kaisha Ltd., Osaka, Japan (non-U.S. corporation)

PI US 811

19900807

&lt;--

AI US 1989-322460

19890313 (7)

PRAI JP 1988-57920

19880311

&lt;--

JP 1988-229327

19880913

&lt;--

DT Statutory

FS Granted

EXNAM Primary Examiner: Terapane, John F.; Assistant Examiner: Anthony, Joseph D.

LREP Sughrue, Mion, Zinn, Macpeak &amp; Seas

CLMN Number of Claims: 3

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 974

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A biocidal composition containing, as active ingredients, at least one imidazole compound represented by formula (I): ##STR1## wherein R.sup.1 represents a phenyl group, a halogen-substituted phenyl group, an alkyl group, or a halogen-substituted alkyl group; and R.sup.2 represents a halogen atom, and at least one other specific compound. The combination of the compound represented by formula (I) and other specific compound can produce an unexpected effect in amount required and biocidal

spectrum.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 120116-87-2P 120116-88-3P 120116-89-4P

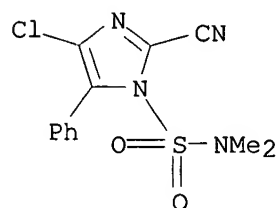
120116-97-4P 120116-99-6P 120117-02-4P

120117-04-6P 120117-05-7P 120117-18-2P

120117-87-5P 120117-88-6P 120117-91-1P

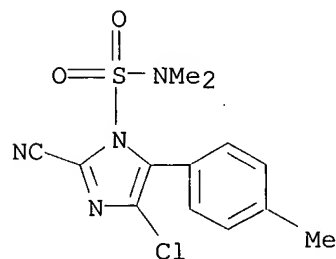
(prepn. of, as fungicide, insecticide, and acaricide)

RN 120116-87-2 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)

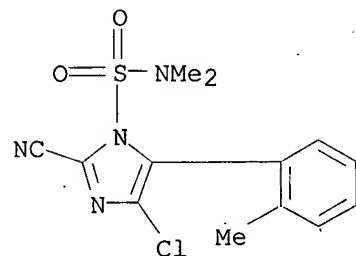
RN 120116-88-3 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



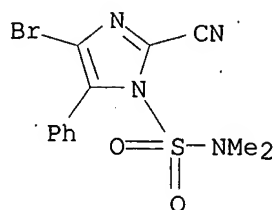
RN 120116-89-4 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



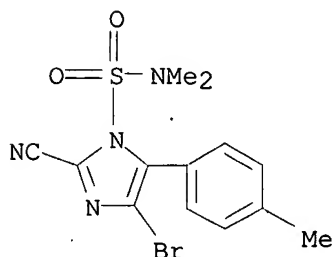
RN 120116-97-4 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



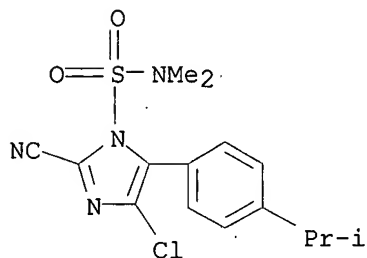
RN 120116-99-6 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-N,N-dimethyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



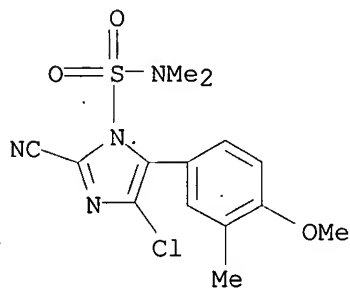
RN 120117-02-4 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-dimethyl-5-[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



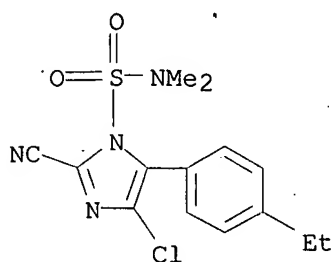
RN 120117-04-6 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxy-3-methylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



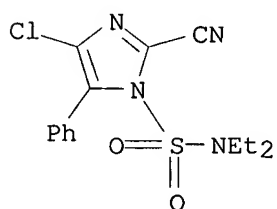
RN 120117-05-7 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethylphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



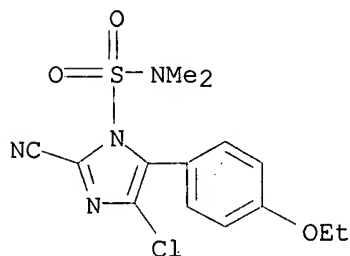
RN 120117-18-2 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-N,N-diethyl-5-phenyl- (9CI)  
(CA INDEX NAME)



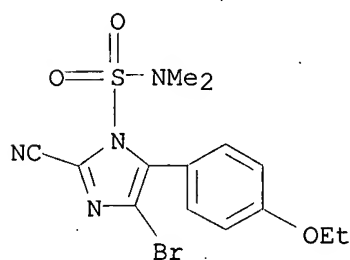
RN 120117-87-5 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-ethoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



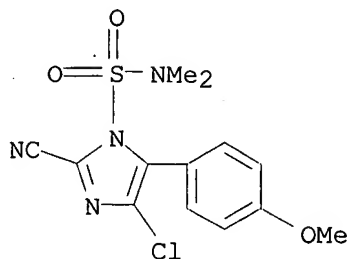
RN 120117-88-6 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-bromo-2-cyano-5-(4-ethoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 120117-91-1 USPATFULL

CN 1H-Imidazole-1-sulfonamide, 4-chloro-2-cyano-5-(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



=> d his

(FILE 'HOME' ENTERED AT 17:08:31 ON 18 JUN 2003)  
SET COST OFF

FILE 'REGISTRY' ENTERED AT 17:08:42 ON 18 JUN 2003

L1 STR  
L2 1 S L1 CSS  
L3 51 S L1 CSS FUL  
SAV L3 LEVY026/A  
L4 49 S L3 AND 46.150.18/RID  
L5 12 S L4 AND 1/NC  
L6 37 S L4 NOT L5  
L7 1 S L6 AND (CU OR P)/ELS  
SEL RN L6 1  
L8 0 S E1  
SEL RN L6 2-37  
L9 1 S L6 NOT E2-E37

FILE 'HCAPLUS' ENTERED AT 17:15:59 ON 18 JUN 2003

L10 2 S L7 OR L9  
L11 39 S L5  
L12 14 S L6  
L13 47 S L10-L12  
L14 1 S US20020142021/PN  
L15 1 S US6375965/PN  
L16 1 S WO98-JP1889/AP, PRN  
L17 1 S (JP97-238973 OR JP97-227113 OR JP97-202575 OR JP97-190494 OR  
L18 1 S L14-L17  
L19 1 S L13 AND L18  
E MATSUO N/AU  
L20 56 S E3  
E MATSUO NORI/AU  
L21 14 S E5  
E MITANI S/AU  
L22 148 S E3, E21  
E ARAKI S/AU  
L23 256 S E3, E20  
E TAKII Y/AU  
L24 36 S E3, 6  
E YAMAGUCHI T/AU  
L25 847 S E3-E5  
E YAMAGUCHI TOMONA/AU  
L26 6 S E3  
L27 24666 S (ISHIHARA? OR SANGYO? OR KAISHA?)/PA, CS  
L28 22 S L13 AND L20-L27  
L29 22 S L19, L28

FILE 'REGISTRY' ENTERED AT 17:21:14 ON 18 JUN 2003

FILE 'HCAPLUS' ENTERED AT 17:21:14 ON 18 JUN 2003

L30 SET SMARTSELECT ON  
SEL L29 1- RN : 557 TERMS  
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 17:21:15 ON 18 JUN 2003

L31 557 S L30  
L32 29 S L31 AND L7,L9,L5,L6  
L33 12 S L32 AND 1/NC  
L34 17 S L31 AND P/ELS  
L35 8 S L34 AND (H3O2P OR H3O3P OR H3O4P)  
L36 1 S L34 AND P/MF  
L37 1 S L34 AND C2H7O3P NOT MXS/CI  
L38 10 S L35,L36,L37  
L39 4 S 7664-38-2 OR 15845-66-6 OR 13598-36-2 OR 6303-21-5  
E PHOSPHOROUS ACID/CN  
L40 2 S E3  
E HYPOPHOSPHOROUS ACID/CN  
L41 2 S E3  
E PHOSPHORIC ACID/CN  
L42 1 S E3  
L43 3 S L39 NOT ESTER  
L44 5 S L40-L43  
SEL RN  
L45 15128 S E1-E5/CRN  
L46 0 S L45 AND L4  
L47 10860 S L45 NOT (MXS OR IDS OR MNS OR PMS OR AYS OR TIS OR RIS)/CI  
L48 9015 S L47 NOT (COMPD OR WITH)  
L49 3073 S L48 AND NR>=1  
L50 5942 S L48 NOT L49  
L51 5947 S L44,L50  
L52 5949 S L38,L51  
L53 2 S L31 AND CU/ELS  
E CINNAMIC ACID/CN  
L54 1 S E3  
E BETA.-METHOXYACRYLATE/CN  
E METHOXYACRYLATE/CN  
L55 3 S L31 AND ?ACRYL?/CNS  
L56 1 S 6162-52-3  
E OXAZOLIDINEDIONE/CN  
L57 1 S E3  
L58 8 S L31 AND C3NO/EA  
L59 256 S L31 AND 46.150.18/RID  
L60 214 S L59 AND 1/NC AND N/ELS  
L61 11 S L60 AND 1/NR  
E PHENYLAMINE/CN  
L62 1 S E3

FILE 'HCAPLUS' ENTERED AT 17:33:47 ON 18 JUN 2003

L63 9 S L52 AND L13  
L64 5 S L53 AND L13  
L65 1 S L54 AND L13  
L66 1 S L56 AND L13  
L67 1 S L57 AND L13  
L68 0 S L62 AND L13  
L69 9 S L63-L67  
L70 9 S L19,L69  
L71 2 S L29 AND L70  
L72 9 S L70,L71  
L73 20 S L29 NOT L72  
SEL RN L19

FILE 'REGISTRY' ENTERED AT 17:35:53 ON 18 JUN 2003